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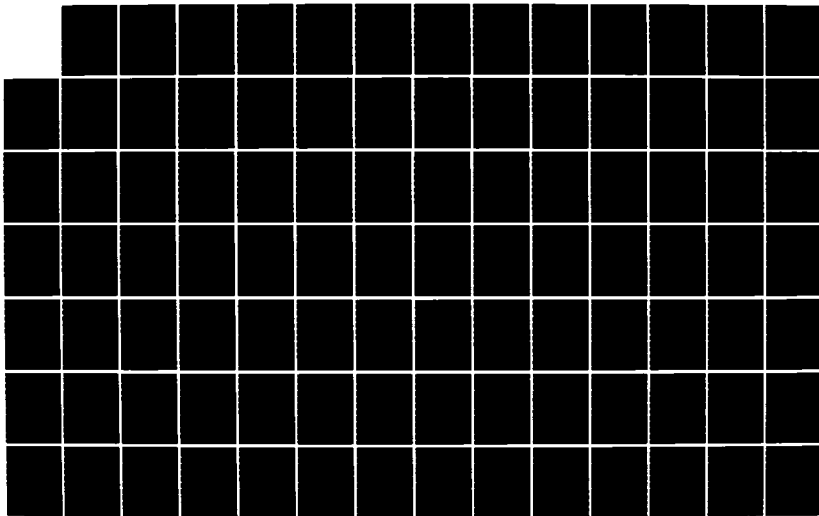
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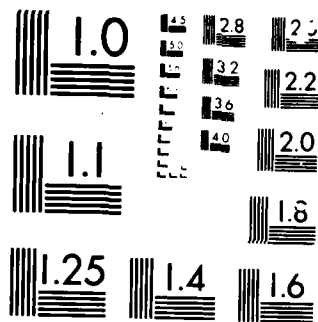
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## BEHAVIORAL RELIABILITY

A Review of Academic Literature and Organizational Programs

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## PREFACE

Many persons have contributed to the sum of information that is presented in this report. Although these contributions have taken a number of forms, each has been critical to gaining a wholistic picture of behavioral reliability and to projecting that picture onto the pages of this volume.

We wish to thank each of the secondary authors of this report - Ed Kemery, Ruth Kanfer, John Kamp, and Marly Cordozo - for their work in summarizing a section of the academic literature and placing it in a form conducive to synthesis of the final product. We are grateful to Meg Keyes and Kristie Dulaney for their assistance at various points in the project. Also, we wish to thank each of the representatives of the organizations at which we conducted site visits. These individuals freely gave of their time and supplied invaluable information as to how behavioral reliability was handled in their organization. Thirdly, we wish to thank John Novak who was so thorough, punctual, and cooperative in typing and assembling this report. John put up with numerous revisions, constructed clear and appealing figures and tables, and had a sharp eye for detail that improved the final product dramatically.

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## CHAPTER 1

### INTRODUCTION

Personnel reliability, because it has impact on virtually every area of organizational effectiveness, is of great concern to most organizations. It is of particular concern to organizations with employees in "sensitive duty positions," those jobs in which inappropriate behavior may result in especially undesirable outcomes. For this reason, a great amount of effort and research has been directed toward a better understanding of the concept of behavioral reliability and how it might be maximized. Behavioral reliability broadly defined includes accepting rules and regulations, making appropriate decisions under stress, cooperating with other employees, following work directives, not acting without thinking, keeping others informed of problems or mistakes, and keeping vital information confidential. In short, a highly reliable employee displays behavior that is dependable, that fits into the work system, and that is well-adapted to stressful or changing conditions.

By contrast, unreliable employee behavior is often inconsistent, overly rigid, or incongruent with the work system. Unreliable employees are more prone to such behaviors as carelessness, hostility, tardiness, substance abuse, or theft and sabotage. Since sensitive duty positions deal with materials, information, equipment, and other people of unusual importance, these kinds of unreliable behavior must be minimized, particularly in these positions. This report reviews the factors that influence reliability, and uses the resulting information to make relevant suggestions. The report begins with a brief overview of how behavior in general comes about, and the factors thought to affect it.

Human behavior has been said to be the world's greatest puzzle, a puzzle characterized by multiple causality and complex interactions. Despite extensive research, prediction of future behavior remains difficult and probabilistic. The point of view taken in this paper is that behavior is best explained by a position that has come to be called interactionism, in which behavior results from the interrelationship between the person and his/her surroundings (Smith, 1973). This implies that an individual's behavior is not only influenced by significant features of the environment, but also that a person's unique blend of attributes may lead him or her to choose particular types of environments in which to behave. Also, the person's characteristics may lead him or her to choose those aspects of the environment that will serve as behavioral cues (Endler & Magnusson, 1976). Thus, there is a two-way relationship in which a person's environment influences his/her behavior and, at the same time, the person's characteristics determine which environment is present and how it may affect those actions.

In attempting to understand and predict human behavior, many people have emphasized the importance of the person and how personal characteristics influence behavior. Many others have argued in the same way for the importance of the environment and its effect on behavior. While it is perhaps common sense to conclude that both are important, much of the research on human behavior has investigated only one at

a time while ignoring the other. Therefore, as this report discusses the factors that influence behavior and reliability of behavior, it does so separately for person variables and environmental variables. Throughout, however, the interactionism perspective is also mentioned in an attempt to tie together results from each area. We begin with a brief historical overview of the development of thought concerning the person, the environment, and interactionism.

The Person. Theories of behavior that emphasize "the person" argue that there are important characteristics of each individual that are highly related to how that person behaves. These characteristics not only describe the person, they can also be used to predict his/her future behavior. This point of view has been held for centuries; the first formal statement of it was based on Hippocrates' theory of humors (Watson, 1978). Hippocrates had postulated that four humors - blood, black bile, yellow bile, and phlegm - made up the constitution of the human body, and determined health and disease. Later, in what is often credited to Galen, these humors came to be associated with personality characteristics. A person with a predominance of blood was said to be of sanguine (warm-hearted, volatile) temperament; one with an excess of black bile was melancholic (sad); yellow bile made the person choleric (quick to anger and to action); and a preponderance of phlegm produced a phlegmatic (humorous) individual. This theory was thus the forerunner of what came to be called personality "type" theory.

According to "type" theory, there exist a relatively small number of personality types that are made up of discrete combinations of personal characteristics (Willerman, 1979). Each individual is believed to fit one and only one type. Sheldon (1940) proposed that there exist three of these categorizations, called somatotypes, and that each type is characterized by both body build and personality. More specifically, Sheldon believed that there are: 1) endomorphs, who are fat, and tend to be complacent and love comfort and approval, 2) mesomorphs, who are muscular, and tend to be assertive, energetic and adventurous, and 3) ectomorphs, who are thin, and introverted, aloof, and self-conscious. A second well-known type theory was that of Carl Jung, whose 1928 book "Psychological Types" proposed that people were either introverts or extroverts. Introverts were those who derived their motivation from inner necessity and feelings, while extroverts were motivated more by external factors such as social relations (Watson, 1978).

Although type theories have a certain intuitive appeal and have been incorporated to some degree into everyday speech and thought, they remain rather gross descriptions of an individual's characteristics, and are subject to numerous inconsistencies and exceptions. A more sophisticated view of the person has focused on traits, which are fairly stable indicators of differences in people's behavioral predispositions, but are narrower in scope and more numerous than types. As Allport (1937) has said, "A person can have many traits but can fit only one type" (p. 42). Therefore, traits are better able than types to capture the uniqueness of each individual, the "relatively enduring

ways in which one person differs from another" (Guilford, 1959, p. 6). Note that traits are described as relatively enduring - they are thus in contrast to states (such as anxiety) that characterize a person only sporadically or for a short time. Anastasi (1948) has summed up the trait concept in the following way: Traits are categories for the orderly description of behavior; categories that are concerned with the organization and interrelationships of behavior, that refer to relatively enduring characteristics, and that differentiate an individual from others, usually within a cultural frame of reference.

A tremendous amount of research has been generated regarding psychological traits, including investigations of the number and structure of traits, the measurement of individual differences on these traits, and the relationship of these measures to later behavior. Much of the evidence from this research has supported the utility of the trait approach. The ubiquity of traits as descriptive units has been well documented, as has the consistency of trait-like behavior over time and multiple situations. On the other hand, there are also numerous researchers who have concentrated their effort on the environment, thereby ignoring personal characteristics just as trait researchers have often ignored situational effects.

The Environment. Although the environment has also been widely viewed as related to behavior, it historically has received much less systematic research than has its trait counterpart. Isidor Chein wrote that: "Perhaps one of the outstanding weaknesses of contemporary psychological theory is the relative neglect of the environment by many of the most influential theoretical viewpoints" (1954, p. 115). Rudolf Moos, in 1973, added that: "Although most current personality theorists subscribe to the belief that behavior is a joint function of both the person and the environment, they have until recently emphasized and studied person variables while paying relatively less attention to environmental variables" (p. 652). Within the last ten years, however, interest in the study of the environment and its effect on behavior has experienced something of an awakening. Stokols (1978), in his Annual Review of Psychology chapter, reports that the research literature on human behavior in relation to its environmental settings is expanding at a staggering rate. This trend continues unabated as evidenced by the introduction of the area's own journal, The Journal of Environmental Psychology, in 1981.

Many of the advocates of the importance of the environment in determining behavior are also adherents of the behaviorist school of psychology. According to this point of view, the environment is seen as the primary source of reinforcement through which all behavior is acquired and maintained. Since the cues in each environmental situation differ, an individual's behavior will differ accordingly, in order to receive reinforcement. Therefore, the situation is seen as the determinant of behavior. Also, the situation is important because what is reinforcing for one person may not be reinforcing for another. Each situation must be examined in order to identify the potential

reinforcers that produce the environment's effect on each individual's behavior.

Walter Mischel (cf. 1973) has been among the most outspoken advocates of the environmental position. As support for his viewpoint, he has argued that there actually is little evidence for behavioral consistency, consistency that is required if one is to support a belief in the trait position. Mischel also argues that this lack of behavioral consistency supports the idea that different environments produce totally different behaviors. Although much of Mischel's additional arguments are more an attack on the trait position than a listing of evidence for environmental effects, there is research that supports the environmental viewpoint. Behavior modification, which involves reinforcing desired behaviors and withholding reinforcement when undesired behaviors are displayed, has demonstrated that manipulation of the environment can produce great changes in behavior. Still other evidence for the importance of the environment is the extensive research with stimulus-response models which show the impact of the situation (stimulus) upon behavior.

Interactionism. Over the last 15-20 years, a controversy has raged in the psychological literature between the trait adherents and the situationist advocates. Although occasionally vitriolic, the controversy has succeeded in bringing to light many of the weaknesses of either position by itself. Interestingly, even in the times of the ancient Greeks, it was realized that both the person and the environment must be considered in order to understand behavior. According to Shute (1972), Aristotle wrote that "While a thing comes to be what it is only in response to the environment, this response itself is directed and limited by a potentiality already present...Natural things (including human behavior) both come to be and grow in continuous interaction between the two (organism and environment). But the responses that are called out by the environment are limited by a determinate potentiality and governed by the form of that which is being generated or growing," (p. 284).

More recently, such theorists as Tolman (1935), Lewin (1935), and Murray (1938) have all recognized the importance of interactionism. After a brief hiatus, modern formulations of interactionism have appeared by such authors as Bowers (1973) and Block (1977). It appears today that interactionism is very much in tune with the zeitgeist, and the principal challenge facing it is not its conceptual feasibility but rather how best to systematically and operationally define it. In the remainder of this report, the perspective of interactionism will be used as the unifying thread to explain why a clear understanding of behavioral reliability is often not achieved. Because the research cited is often not unified, however, each of the major classes of variables that interact in producing behavior are discussed separately. Thus, Chapter II deals in more depth with the person and the research tying personal characteristics to behavior.

Chapter III does the same for the environment. In Chapter IV, the concept of stress is discussed, how it is influenced by both personal characteristics and the environment, and what its impact is on the reliability of performance. Chapter V examines psychosocial correlates of substance use and abuse, which is a major concern for behavioral reliability.

Primarily, Chapters II, III, IV, and V are discussions of academic research, research that is mostly an examination of basic issues. Through-out these four chapters, however, an attempt is made to show how the research results pertain to development of an effective behavioral reliability program. By contrast, in Chapter VI, a more applied discussion of behavioral reliability is presented, and various reliability programs from around the United States are described and evaluated. Therefore, the following report examines behavioral reliability from both an academic, more basic, viewpoint and an applied, more specific, perspective. In Chapter VII, we draw upon both of these sources of information in order to form conclusions and propose a model of an optimal behavior reliability program for sensitive duty positions in organizations.

## CHAPTER 2

### THE PERSON

As mentioned in the overview, the characteristics or traits of each person bear an intuitive relationship with the behavior of that person. For example, we tend to think of aggressive persons as being more apt to engage in conflict and conscientious persons as more likely to be on time for work. Further, these personal characteristics are seen as relatively stable over time and across many different types of trait-relevant situations. Individual differences on these traits have usually been measured with self-report inventories that ask the respondent to indicate how closely a trait-related statement describes them. In this section, research findings will be summarized regarding both the structure of these trait measures and their validity in predicting later behavior. Three major areas of individual differences are included: personality, vocational interests and needs, and biographical data. Each of these areas is non-cognitive in nature, i.e. they do not specifically address differences among persons in intellectual or cognitive ability. This restriction of the discussion is made because the primary purpose of this paper is to illustrate the factors affecting the reliability of human performance. While cognitive abilities have been demonstrated to be predictive of the level of performance, non-cognitive predictors are better able to forecast the consistency of performance.

The empirical evidence for this will be given later, but a simple example may clarify the point. If an individual applies for a job as an engineer, an ability measure will indicate whether that person has the potential to do the job. If, however, we wish to know how likely it is that the individual will actually do the job day in and day out, then measures of personality, interests, and biographical experiences are much more relevant.

#### Personality

According to Allport (1937), "Personality is the dynamic organization within the individual of those psychophysical systems that determine his unique adjustments to his environment" (p. 48). Gough (1976) points out that this definition recognizes the individuality of each person, the interplay of internal and external forces, and the adaptability of the system for change. Operationally, these components have most often been incorporated in personality traits, of which Allport and Odbert's (1936) investigation turned up over 17,000. Obviously, however, there is much redundancy and narrowness in such a list and so a great amount of effort has been directed toward convergence on a smaller number of more basic traits.

**Personality Structure.** Factor analytic work by such investigators as Cattell (1950), Guilford (1975) and French (1973) suggested that there were between twenty-four and fifty-eight primary or "first-order" factors that characterize the personality domain. By contrast, Tupes and Cristal (1961) and Norman (1963) found that five basic dimensions emerged from their factor analysis of peer ratings and nominations: surgency, emotional stability, agreeableness, conscientiousness, and culture. These five higher-order dimensions have recently been endorsed by Goldberg (1981) for use in the self-report domain as well as peer ratings, a conclusion supported by Hogan (1983). Hogan (1983) has, however, suggested the division of the surgency factor into Dominance and Affiliation, resulting in six distinct dimensions.

Kamp and Hough (1984) sought to verify the utility of this scheme by classifying each of the 146 scales contained in twelve major personality inventories into one of the aforementioned six dimensions or a miscellaneous dimension. Published intra-inventory and inter-inventory correlations were then used for analysis of between-category and within-category correlations. If the taxonomy is useful, within-category correlations should be high and between-category correlations should be low. The results of this procedure are shown in Table 2.1.

Table 2.1. Mean within-category and between-category correlations.

Potency	Mean $r$ = .46 SD $r$ = .16 N $r$ = 146						
Adjustment	Mean $r$ = .20 SD $r$ = .18 N $r$ = 321	Mean $r$ = .43 SD $r$ = .19 N $r$ = 165					
Agreeableness	Mean $r$ = .04 SD $r$ = .17 N $r$ = 173	Mean $r$ = .24 SD $r$ = .16 N $r$ = 162	Mean $r$ = .37 SD $r$ = .14 N $r$ = 44				
Dependability	Mean $r$ = -.08 SD $r$ = .16 N $r$ = 286	Mean $r$ = .13 SD $r$ = .20 N $r$ = 276	Mean $r$ = .06 SD $r$ = .17 N $r$ = 166	Mean $r$ = .34 SD $r$ = .18 N $r$ = 121			
Intellectance	Mean $r$ = .12 SD $r$ = .15 N $r$ = 175	Mean $r$ = .02 SD $r$ = .14 N $r$ = 193	Mean $r$ = .04 SD $r$ = .16 N $r$ = 94	Mean $r$ = -.12 SD $r$ = .18 N $r$ = 162	Mean $r$ = .40 SD $r$ = .19 N $r$ = 52		
Affiliation	Mean $r$ = .09 SD $r$ = .21 N $r$ = 157	Mean $r$ = .00 SD $r$ = .16 N $r$ = 150	Mean $r$ = .10 SD $r$ = .17 N $r$ = 98	Mean $r$ = .08 SD $r$ = .14 N $r$ = 160	Mean $r$ = -.14 SD $r$ = .15 N $r$ = 84	Mean $r$ = .33 SD $r$ = .16 N $r$ = 45	
Miscellaneous	Mean $r$ = .09 SD $r$ = .17 N $r$ = 392	Mean $r$ = .12 SD $r$ = .18 N $r$ = 419	Mean $r$ = .02 SD $r$ = .18 N $r$ = 215	Mean $r$ = .02 SD $r$ = .18 N $r$ = 361	Mean $r$ = .04 SD $r$ = .17 N $r$ = 242	Mean $r$ = -.04 SD $r$ = .15 N $r$ = 208	Mean $r$ = .05 SD $r$ = .20 N $r$ = 246
Potency	Adjustment	Agreeableness	Dependability	Intellectance	Affiliation	Miscellaneous	

It can be seen that within-category correlations range from .33 to .46 while between-category correlations are between .00 and .20. Therefore, it can be concluded that the proposed taxonomy reasonably and quite completely represents the domain of personality traits, at least as currently measured.

Validity. Five major reviews of the criterion-related validity of personality measures have been undertaken within the last 40 years: Ellis and Conrad (1948), Ghiselli and Barthol (1953), Guion and Gottier (1965), Ghiselli (1973), and the Kamp and Hough (1984) review. In addition to being the most current, the Kamp and Hough (1984) review is very thorough and includes hundreds of validity coefficients. Their review examined the validities of personality measures according to the aforementioned taxonomy of six constructs plus four additional content categories that fell outside the proposed taxonomy. Three of these four additional categories (Achievement, Masculinity, and Locus of Control) could not be easily classified with the more general constructs, while the fourth category (Unclassified Military Scales) summarizes results gleaned from military research that did not provide enough information for adequate classification into another category.

Table 2.2. Median criterion-related validity coefficients for temperament predictors for all criterion categories.

Temperament Predictor Category	Educational Criteria	Training Criteria	Job Proficiency Criteria	Job Involvement/Withdrawal Criteria	Adjustment Criteria
Potency	.06(42) <sup>a</sup>	.13(36)	.07(63)	.04(13)	-.17(31)
Adjustment	.14(43)	.19(28)	.11(65)	.17(16)	<span style="border: 1px solid black;">-.33</span> (52)
Agreeableness	.03(9)	.08(5)	.03(22)	-.02(5)	-.03(5)
Dependability	.13(24)	.12(20)	.11(49)	.14(15)	<span style="border: 1px solid black;">-.43</span> (40)
Intellectance	.17(6)	.19(5)	.01(16)	-.09(9)	.18(3)
Affiliation	-.03(5)	--	-.02(6)	.09(4)	-.07(4)
Achievement	<span style="border: 1px solid black;">.30</span> (8)	<span style="border: 1px solid black;">.33</span> (4)	<span style="border: 1px solid black;">.24</span> (4)	--	<span style="border: 1px solid black;">-.33</span> (5)
Masculinity	-.16(8)	.09(3)	.10(10)	.03(4)	-.13(11)
Locus of Control	<span style="border: 1px solid black;">.37</span> (1)	<span style="border: 1px solid black;">.29</span> (2)	<span style="border: 1px solid black;">.23</span> (7)	--	--
Unclassified Military Scales	--	.18(8)	.18(25)	--	<span style="border: 1px solid black;">-.23</span> (20)

<sup>a</sup>The number in parentheses next to each median value is the number of correlations on which that median is based.

NOTE: Median correlations above .20 are indicated by a box.



Table 2.2 shows the ten predictor categories, as well as five criterion categories in a summary validity table. Although such a table loses a degree of information by combining hundreds of validities into a much smaller number of summary coefficients, the results do reflect the levels of relationship that might generally be expected. It can be seen that for educational criteria, Achievement and Locus of Control predictors yield the highest correlations (.30, .32) while other predictors have more modest relationships. Persons high in Achievement are those who set high goals and strive for excellence, while those high on Locus of Control tend to believe that their fate is determined by their own activities. These same traits are also the best predictors for both training and job proficiency criteria, although the level of correlation varies somewhat.

The level of the figures shown are, however, somewhat misleading. As Ghiselli and Barthol (1953) found, the level of validity of these predictors may vary directly with the occupation in which it is calculated. For example, certain personality characteristics may be more important in a sales job than in a service job, while other characteristics show the opposite relationship. Thus, since many studies compute validities for all scales for several jobs, it is likely that a predictor's high relationship with these criteria in one job is canceled out by a low relationship in another occupation. Indeed, the summary values obtained by Ghiselli and Barthol (1953) and Ghiselli (1973) are substantially higher than in the Kamp and Hough (1984) review, presumably because the Ghiselli reviews included only results for personality predictors that appeared most relevant to the job in question. The Kamp and Hough review did not follow that procedure since it is fairly subjective and could lead to overestimation of the relationship. On the other hand, Kamp and Hough's more conservative procedure could also have underestimated the actual level of validity expected.

The job involvement/withdrawal category in Table 2.2 includes studies that used as criteria job tenure, turnover, military reenlistment, and absenteeism. Although only a small number of studies have been conducted in this area, it appears that measures of Adjustment and Dependability yield the highest correlations with job involvement/withdrawal. Persons high in Adjustment tend to be calm, relaxed, and cheerful, while those high in Dependability are conscientious and rule-abiding.

While Adjustment and Dependability appear important in predicting job involvement/withdrawal, they obtain much higher relationships when predicting criteria in the adjustment area. Adjustment includes those aspects of work behavior that are most relevant to a consideration of personnel reliability, such as unfavorable discharge, delinquency, and substance abuse. Measures of Achievement, Dependability and Adjustment are not only the best predictors of these criteria, they also yield the highest correlations overall. In addition, these relationships are

among the best documented in this domain since they are based on large numbers of validities. Therefore, it seems reasonable to conclude that the highest level of validity achieved by personality predictors is in predicting those behaviors most relevant to the reliability of performance, i.e., unfavorable discharge, delinquency and substance abuse. It might also be noted that adjustment criteria are typically the criteria that are least well predicted by cognitive variables.

Summary. The preceding discussion of personality, its structure, and the validity of its measures has been extremely brief in comparison to the vast amount of literature compiled on these topics over the last several decades. As such, it has been intended as a broad overview of a complex and heterogeneous area. Nevertheless, a number of salient conclusions stand out with respect to an understanding of the role of personality in the reliability of human performance. First, there appears to be reasonable consensus that the personality domain can be represented by a taxonomy of six dimensions that are distinct and fairly independent. Second, these dimensions, as well as a few additional content categories, are predictive of a wide range of criteria of interest, although these relationships are often moderated by job type. Finally, personality measures seem to have their greatest predictive power when applied to adjustment criteria, those same criteria that are most important for the reliability of behavior. This finding, which is important in its own right, gains additional significance when it is noted that cognitive variables rarely are predictive of these criteria, and other non-cognitive predictors such as vocational interests typically yield more modest correlations with adjustment. Before closing this discussion of personality, it is noted that Chapter V provides a more in-depth discussion of the prediction of substance abuse through personality. Thus, Chapter V describes additional research on personality prediction as applied to this critical variable in performance unreliability.

#### Vocational Interests

E. K. Strong, perhaps the most recognized researcher in interest assessment, defines interest in the following ways: "Interest is a response of liking ... an aspect of behavior" (1943, pp. 6, 8). Interests "point to what the individual wants to do, they are reflections of what he considers satisfying;" "Interests may be conceived of as a single expression, a general tendency, or the score on an interest inventory," (1943, p. 19). It is the last of these, the interest inventory, that has received the most investigation within the domain, and from which the structure of the area has evolved.

Table 2.3. The relation of Roe's occupational categories to the factors from selected factor analyses.

Classification	Vernon	Thurstone	Dailey	Strong	Kuder	Guilford et al.
I. Service	Social welfare vs. administrative Gregarious vs. isolated	People	Wellfare uplift	People	Social service	Social welfare
II. Business Contact	Gregarious vs. isolated	People	Business contact	Business	Persuasive	Business
III. Organization	Administrative vs. social welfare	Business	Business detail CPA	Business system	Clerical Computational	Business Clerical
IV. Technology	Scientific vs. display Isolated vs. gregarious	Science	Technical	Things vs. people	Scientific Mechanical Computational	Scientific Mechanical
V. Outdoor	Active vs. verbal				Outdoor	Physical drive Preference for outdoor work
VI. Science	Scientific vs. display Isolated vs. gregarious	Science	Technical	Things vs. people	Scientific	Scientific
VII. General Cultural	Verbal vs. active	Language	Verbal	Language	Literary	Cultural
VIII. Arts and Entertainment	Display vs. scientific	Language	Verbal	Language	Artistic Musical Literary	Aesthetic expression Aesthetic appreciation Cultural Physical drive in some active vs. verbal

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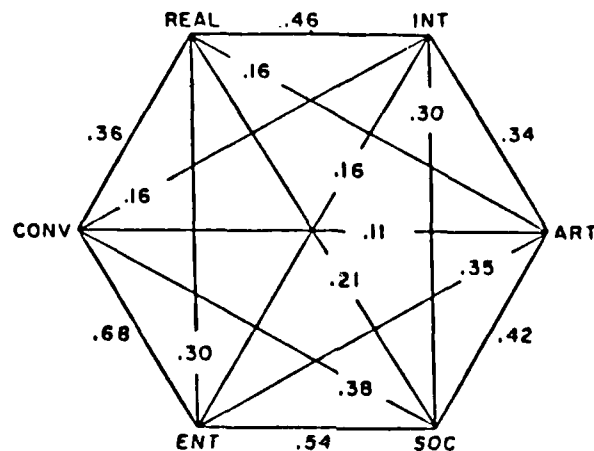
Interests Structure. As mentioned, the interest inventory played a large part in the research into the structure of interests, principally through factor analysis of these early inventories. Investigations by researchers such as Thurstone in the early 1930s and Strong (1943) were followed up by others including a major factor analysis by Guilford, Christianson, Bond, and Sutton (1954). The results of several of these efforts have been presented by Roe (1956) in terms of her own classification and are shown in Table 2.3. It can be seen that despite quite different investigations by several authors over twenty-plus years, there is striking correspondence in the results. In addition, Roe's (1956) classification of eight categories of vocational interests was found to have a circular arrangement, an idea that was a precursor to the development by Holland (1966, 1973) of a hexagonal model of interests.

Holland (1973) summarizes his model as follows:

- 1) In our culture, most persons can be categorized as one of six types: realistic, investigative, artistic, social, enterprising or conventional.
- 2) There are six kinds of environments: realistic, investigative, artistic, social, enterprising or conventional.
- 3) People search for environments that will let them exercise their skills and abilities, express their attitude and values, and take on agreeable problems and roles.

- 4) A person's behavior is determined by an interaction between his personality and the characteristics of his environment.

The relationships among the six types and environments can be illustrated by a hexagon as diagrammed below:



Source: Holland, J.L., Whitney, D.R., Cole, N.S., and Richards, J.M., Jr. An empirical occupational classification derived from a theory of personality and intended for practice and research. ACT Research Report No. 29. Iowa City: The American College Testing Program, 1969. Reprinted with permission.

Figure 1. A hexagonal model for defining the psychological resemblances among types and environments and their interactions.

Although Holland refers to his model as one of personality, it has been investigated almost exclusively in the interests literature. Two recent large scale reviews (Walsh, 1979; Holland, Magoon and Spokane, 1981) report that over three hundred empirical studies regarding the theory have been conducted and that the basic person-environment typology has been strongly supported. In addition, the model has been widely applied for such purposes as focusing interest inventory construction and vocational guidance. It does appear that Holland's model suffers from such weaknesses as ignoring occupational level and would benefit from greater specificity of constructs, but overall it must be considered among the most successful conceptualizations of a domain within the psychological literature.

A related but less well-known theory of vocational behavior is called the Theory of Work Adjustment (TWA) (Dawis, Lofquist and Weiss, 1968). Also based on the idea of person-environment fit, the TWA postulates that there are individual differences in vocational needs such as for security or recognition. In order to maximize job satisfaction and tenure, these needs should be matched with the occupational reinforcers that are available in the work environment. The empirical research underlying the theory is impressive as Holland, Magoon, and Spokane (1981) write: "The Minnesota work (TWA) is one of only a few programmatic efforts to comprehend a major element of vocational life. Both practitioners and researchers can benefit from a reading of perhaps the most analytical and hard-headed analysis of person-job interactions" (p. 297).

Validity. The criterion-related validity of interest inventories had not been systematically and comprehensively summarized before the Barge and Rough (1983a) review was undertaken. This review surveyed the results of over 100 independent studies and will again be summarized by criterion category. Perhaps the most frequently and completely documented relationship within this literature is that between interests and occupational membership (tenure in an occupation). This relationship has been demonstrated in the following ways: 1) Scores on the occupational scales of interest inventories generally differ by about two standard deviations between members of that occupation and people in general; 2) members of an occupation typically score 2 1/2 standard deviations higher on their own scale than on other occupational scales; and 3) the hit rate, or percentage of people who have a "good" (McArthur, 1954) correspondence between their interest scores and the occupation they ultimately enter, is approximately 50%.

The confluence of this evidence, taken together with the fact that many of these predictive studies included follow-up periods of up to twenty years, provides striking support for the predictiveness and stability of vocational interests. It also has profound implications for personnel reliability. Since at least 50% of people continue over many years in occupations that are highly associated with their measured interests, then interests have been demonstrated to be a powerful tool in predicting which job applicants are likely to be satisfied and stable employees in a given job or jobs. In addition, interests are useful predictors of a range of other criteria.

Correlational results for these remaining criterion categories are shown in Table 2.4. Note that for training proficiency, job involvement/satisfaction, and job proficiency, the median validities are nearly all in the mid-.20s to low .30s. This suggests that vocational interests are clearly related to nearly all aspects of work behaviors. In addition, these results are based on quite a large number of studies and substantial sample sizes, suggesting a good degree of confidence.

Table 2.4. Median criterion-related coefficients  
for vocational interest predictors.

Criterion Category	TRAINING PROFICIENCY			JOB INVOLVEMENT		JOB PROFICIENCY	
	Objective Measures	Subjective Measures	Course Completion	Job Satisfaction	Re-enlistment/ Turnover	Ratings	Archival Production
Number of Studies	8	2	3	18	3	11	3
Median Correlation							
Overall	.17	.35	.28	.31	.29	.20	.33
Predictive	.17	.35	.28	.23	.29	.20	.33
Concurrent				.33		.25	
Correlation Range	.02-.43	.28-.41	.23-.42	.01-.62	.19-.29	.01-.40	.24-.53
N Range	53-3505	27-373	355-4502	25-18,207	125-789	50-2400	37-195
Median N	751	200	593	501	520	464	116

Summary. Individual differences in interests are among the most stable personal characteristics found in human behavior. In fact, Campbell (1971) reports that after age twenty-five, people's interests change very little. He supports this assertion by presenting the interest inventory profiles of several groups for test-retest periods of up to thirty-eight years and noting their striking similarities over time. Perhaps because of this remarkable stability, interest inventories are able to predict an individual's occupational membership over long periods. These inventories are also able to predict most other job-related criteria including job satisfaction and performance in training.

Therefore, in terms of personnel reliability, an individual's interests are of clear importance. An employee who works on a job that is to his/her interest is more likely to be satisfied, to perform consistently, and to stay in that occupation for lengthy periods. Also, such an employee is presumably easier to motivate and less susceptible to such behaviors as absenteeism or irritation with the work itself. The final non-cognitive topic area to be discussed is also related to personnel reliability but the relationship is more direct since it considers the frequency of similar behavior in the past.

## Biographical Data

Perhaps the most common axiom applied to attempts to understand human behavior is that past behavior is the best predictor of future behavior. Examples of this are so commonplace in everyday life that it is difficult to envision a situation in which behavior would be predicted that had no analogue in previous behavior. Further, the quality of this prediction is thought to be a function of the degree of correspondence between the past behavior and the future behavior. An excellent example of this rationale is the relationship between grade point average in high school (past behavior) and in college (future behavior). Since they share many common components such as study habits, aptitude, and academic interest, there is a high degree of correspondence between the predictor space and the criterion space. Thus, one would expect to observe a high degree of relationship in the two grade point averages, an expectation that has been repeatedly confirmed (Freeberg, 1967). Also, to the extent that the predictor space differs from the criterion space, the observed relationship is expected to be lower.

Biodata Structure. Historically, much of the effort within the biodata domain has proceeded with little or no consideration of the basic dimensions of biographical information. Instead, the emphasis in this area has largely been on "blindly" empirical prediction of criteria. A noteworthy exception to this trend, however, has been the work of Owens and his colleagues who, on the basis of several factor analyses over a 10-year period, have concluded that the following factors appear to represent the biodata domain:

### Males

Warmth of Parental Relationship  
Intellectualism  
Academic Achievement  
Social Introversion  
Scientific Interest  
Socioeconomic Status  
Aggressiveness/Independence  
Parental Control vs. Freedom  
Positive Academic Attitude  
Sibling Friction  
Religious Activity  
Athletic Interest  
Social Desirability

### Females

Warmth of Maternal Relationship  
Social Leadership  
Academic Achievement  
Parental Control vs. Freedom  
Cultural-Literary Interests  
Scientific Interest  
Socioeconomic Status  
Expression of Negative Emotions  
Athletic Participation  
Feelings of Social Inadequacy  
Adjustment  
Popularity With Opposite Sex  
Positive Academic Attitude  
Warmth of Paternal Relationship  
Social Maturity

The generalizability and temporal stability of this factor structure has been supported further by work by Eberhardt and Muchinsky (1982) and Heiner and Owens (1982), although more strongly for males than females.

Owens (1968) has also formulated a conceptual model that characterizes how biographical information might be used in gaining further understanding into behavioral development and prediction.

This model, termed the development-integrative model, is shown below:

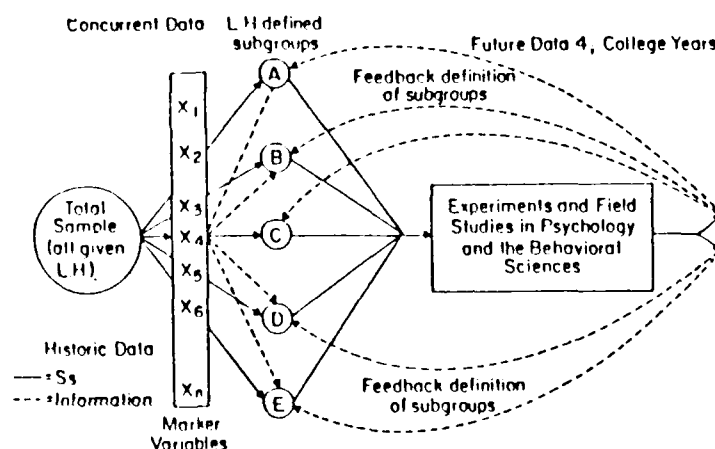


Figure 2. The development-integrative model.

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Basically, the model fosters the development of relatively homogeneous subgroups of people that are based on the subgroup members' similarity in life history (biodata) as well as other characteristics. When these subgroups have been well-defined through field and experimental studies, then predictions can easily be made about the behavior of members of a subgroup and also about newly assessed individuals on the basis of their similarity to a subgroup.

**Validity.** Although as mentioned the structure of the biodata domain has received little attention relative to other domains, the criterion-related validity of biographical information is among the best associated with any predictor area. These two observations may in fact be related, since a life history event often pertains to many personal characteristics simultaneously. Therefore, the life history event would likely be difficult to classify according to some conceptual structure, but would also tend to be highly predictive of similar complex behavior in a related situation. The criterion-related validities of these predictions are again discussed by criterion category.



Table 2.5. Median criterion-related validity coefficients  
for biodata predictors.

	Median Correlations (Overall)	Predictive	Concurrent	Range of Correlations	Number of Studies	Median Sample Size	Range of Sample Size
<u>Training Criteria</u>							
Objective Measures	.23	.38	.07	.00-.59	7	519	114-7929
Subjective Measures	.33	.33	---	.11-.47	2	1036	140-2212
Combination	.11	.11	---	.01-.47	2	151	134-168
Course Completion	.25	.28	.25	.00-.55	9	438	115-4502
Overall	.25			.11-.33	20	479	151-1036
<u>Job Involvement</u>							
Absenteeism & Turnover	.25	.25	.33	.00-.60	15	702	105-20,000+
Tenure	.32	.31	.56	.05-.74	18	150	74-14,738
<u>Job Proficiency</u>							
Ratings & Rankings	.32	.18	.38	.00-.60	27	294	100-3964
Archival Production	.31	.20	.42	.00-.70	10	800	100-12,453
<u>Job Adjustment</u>							
Substance Abuse	.26	---	.26	.16-.39	1	2043	2043
Delinquency	.20	.14	.33	.00-.63	3	134	100-6185
Unfavorable Discharge	.27	.27	---	.07-.36	2	10,854	6455-15,252

Table 2.5, which is from the review by Barge and Hough (1983b), summarizes the results of nearly 100 independent correlational studies of the relationship between biodata items and job criteria. With regard to the first criterion category of training proficiency, the median validities are around the mid .20s to low .30s, and except for the two studies using combination criteria, the sample sizes are quite good. Similar levels of validity are found in the job involvement and job proficiency studies, illustrating not only the robustness of these findings, but also that the preponderance of investigation has been with these two criterion areas. Finally, the job adjustment category shows correlations in the mid to low .20s, although it includes only six investigations.

Summary. The validity levels found by the nearly 100 studies summarized in this review show that biographical data, like vocational interests, have a consistent and stable relationship with a range of job criteria. Median validities generally were in the mid .20s to low .30s, although individual studies reported values ranging from .00 to .70. The overwhelming majority of the studies used job involvement and job proficiency as criteria, but training proficiency was also utilized in twenty studies. Only six studies looked at biodata's relationship with job adjustment criteria, the category in which personality obtained its best predictive power. Nevertheless, it seems likely that just as past behaviors are good predictors of future job proficiency, so they are of future job adjustment.

## Integration - The Person

This relatively brief overview of the characteristics of the person has attempted to show the way in which various traits have been structured and also how they relate to job behaviors of interest. As these characteristics have been discussed, it is apparent that the person can be viewed from a number of different perspectives such as through their unique personality, interests, or prior behavior and experiences. These perspectives are distinct but also inter-related. Further, these perspectives have been investigated differently and to differing degrees.

Therefore, in order to optimally select for and monitor reliable performance, each of the areas discussed should be utilized. Personality characteristics are highly related to an individual's job adjustment and how likely that person is to engage in substance abuse, delinquency, or other unreliable and dischargeable behaviors. Vocational interests are among the most stable of personal characteristics and predict an individual's occupational membership over long periods of time. Finally, biodata is the best of the three at predicting job proficiency criteria, and like vocational interests, is related to all other job aspects as well. Thus, each of the areas is different and each is also complementary in providing a well-rounded and useful view of the person. As argued in the introduction, however, the person is only one aspect of the interaction that produces behavior.

## CHAPTER 3

### THE ENVIRONMENT

In the introduction to this report, it was pointed out that the environment has traditionally received less research than has the person. It was also noted that more recently research regarding the environment has experienced something of an upsurge. This greater appreciation of the importance of environmental effects for behavior has been accompanied by a desire to make more manageable the complexity and number of environmental variables under study. Therefore, in order to impose some structure on this area, we will first discuss the various taxonomies that have been proposed to classify environmental effects.

#### Taxonomies of the Environment

The environment in which humans function is extremely complex, far too complex to be envisioned as one monolithic stimulus that forms the basis for stimulus-response behavior. Thus, environmental taxonomies provide a more fine-grained structure of environmental variables, as well as organizing these variables into reasonably distinct categories. Through such taxonomic effort, the situational characteristics that facilitate or constrain behavior should be more clearly pinpointed. Among the first of these efforts was that of Henry Murray (1938). Murray described the environment in terms of the "press" that influence which behaviors are most likely to occur. He also drew an important distinction between the factors in the objective environment (alpha press) and the factors in the individual's perception of that environment (beta press). Since these two may be quite different, the distinction remains very important for such endeavors as job redesign or changing an organization's culture. Murray's taxonomy, however, was of a highly clinical nature and appears to apply more to the environments of his psychotherapy clients than to more typical and generalized environments.

A second significant effort toward characterizing the environment came from the work of Sells (1963). Compared to that of Murray, Sells' taxonomy appears both more comprehensive and less clinically oriented. The taxonomy, which is shown below, is often cited as among the best early efforts in this area and a useful scheme for guiding later conceptions of the environment.

#### Sells (1963)

##### Natural aspects of environment

- Gravity
- Weather
- Terrain
- Natural resources

Man-made aspects of environment

- Social organization
- Social institutions
- Social norms

Description of task-problem, situation and setting

- Focal task situation
- Individual's relation to situation
- Other persons
- Physical characteristics

Externally referenced individual characteristics

- Biologically defined factors
- Socially defined factors

Relatively referenced individual characteristics

- Togetherness situations
- Group situations

A third major development in categorizing the environment was an outline developed by Moos (1973). Since Moos' taxonomy has been perhaps the most widely accepted and also because it is well-delineated and documented, it is described in somewhat more detail. Moos (1973) lists six major methods by which characteristics of environments have been related to indices of human functioning:

1. Ecological dimensions which include both geographical-meteorological and architectural-physical design variables;
2. Behavior settings that examine both molar behavior and the ecological context in which it occurs (cf. Barker, 1968);
3. Dimensions of organizational structure such as size and control structure;
4. Personal and behavioral characteristics of the milieu inhabitants that define the environment's characteristics;
5. Psychosocial characteristics and organizational climate including relationship, personal development, and system dimensions;
6. Functional or reinforcement properties of environments that influence behavior through the reward contingencies available.

It can be seen that Moos' six categories are non-exclusive, overlapping, and mutually interrelated. Nevertheless, the scheme does impose a certain order upon the plethora of environmental variables, and is helpful in focusing attention upon the most relevant aspects of the

environment for a particular purpose. Next, the remaining seven taxonomies will be presented and briefly discussed. Where appropriate, their relationship with the Moos' categories will be discussed.

One well-researched taxonomy of the environment that closely fits a Moos category is that of the Theory of Work Adjustment (Dawis, Lofquist, & Weiss, 1968). In this approach, the work environment is seen as composed of a set of stimulus conditions that serve as reinforcers for people in that environment. A listing of 21 such reinforcers has been developed, and a job or environment may be characterized in terms of its relationship to each reinforcer in what is called an occupational reinforcer pattern. The taxonomy, which is listed below, corresponds closely to Moos' Category 6.

Theory of Work Adjustment (1968)  
Occupational Reinforcers

Ability Utilization	Recognition
Achievement	Responsibility
Activity	Security
Advancement	Social Service
Authority	Social Status
Company Policies	Supervision-human relations
Compensation	Supervision-technical
Co-workers	Variety
Creativity	Working Conditions
Independence	Autonomy
Moral Values	

Another well-researched environmental characterization stems from work by Insel and Moos (1974). Through extensive study of eight different environments (psychiatric wards, community psychiatric treatment programs, correctional institutions, military basic training, university student residences, junior and senior high school classrooms, work environments, and social, therapeutic and decision-making groups), three broad categories were developed, along with 17 sub-dimensions. Further, Insel and Moos (1974) analyzed environmental inventories developed by eight other investigators and found that their three broad categories could reasonably and adequately account for the environmental dimensions in these instruments. The Insel and Moos (1974) taxonomy is given below.

Insel & Moos (1974)

Relationship
Involvement-affiliation
Spontaneity-expressiveness
Support
Cohesiveness

Personal Development

- Autonomy-Independence
- Practical Orientation
- Personal problem orientation
- Anger and Aggression
- Competition
- Intellectuality
- Traditional social orientation

System maintenance and system change

- Order and organization
- Clarity
- Control
- Physical comfort
- Work pressure
- Innovation

As a companion to the Insel and Moos taxonomy, Moos (1981) has published the Work Environment Scale (WES) in order to measure the psychosocial environments (Moos Category 5) of different types of work settings. Although the WES scales differ slightly from the dimensions of the Insel and Moos taxonomy, they are quite similar as shown below.

Work Environment Scale (1981)

Relationship Dimensions

1. Involvement
2. Peer Cohension
3. Supervisor Support

Personal Growth Dimensions

4. Autonomy
5. Task Orientation
6. Work Pressure

System Maintenance and System Change Dimensions

7. Clarity
8. Control
9. Innovation
10. Physical Comfort

The remaining taxonomies are similar to the WES and reflect the increasing current emphasis on the perceived and psychosocial environment, similar to what Murray had termed "beta press" nearly 50 years ago. These efforts appear to center around the importance of the organizational

climate and the perception of the environment's constraints. In so doing, they tend to draw from several of Moos' six categories while simultaneously focusing on the impact of the environment for the individual's work performance. They are thus very much taxonomies of the work environments as opposed to a more general environment.

Peters, O'Connor, & Rudolf (1980)

Job-related information  
Tools and equipment  
Materials and supplies  
Budgetary support  
Required services and help from others  
Task preparation  
Time availability  
Physical environment

Dunnette (1983)

Time Span of Discretion  
Cognitive workload  
Social workload  
Physical workload  
Physical environment  
Reinforcing Properties of Job or Work Place  
Authority relationships (upward)  
Authority relationships (downward)  
Role conflicts  
Seriousness of consequences of ineffective performance

Borman, Roberson, & Rose (1984)

Opportunity to gain/maintain job skill	}	Constraints
Tools/Equipment/Resources		
Workload/Time		
Perceived job importance		
Physical working conditions		
Job relevant authority		
Ability utilization		
Job change		
Discipline	}	Climate
Recognition/rewards		
Sensitivity/Support-Personal		
Sensitivity/Support-Job related		
Leader or Peer Role Models		

Schneider (1984)

- |                       |  |
|-----------------------|--|
| PRODUCTION<br>ISSUES  | 1. Job uncertainty (frequency of exceptions included)<br>2. Task structure (including rules and procedures<br>for doing task)<br>3. Task involvement |
| MAINTENANCE<br>ISSUES | 4. Equipment (availability, appropriateness,<br>maintenance)<br>5. Personnel (training)<br>6. Physical Environment<br>7. Socialization<br>8. Rewards |
| MANAGERIAL<br>ISSUES  | 9. Goal clarity/conflict/level<br>10. Rules and Procedures<br>11. Intergroup Coordination<br>12. Workload<br>13. Feedback                            |
| SUPPORT               | 14. Information availability/accuracy<br>15. Interunit cooperation   |

Over the past several pages, ten differing taxonomies of the environment have been presented, taxonomies that differ in both scope and focus. In order to synthesize from these previous efforts an environmental taxonomy that was comprehensive, but yet focused on the most important elements of the work environment, the six categories proposed by Moos (1973) were again reviewed. As part of the present review, a new taxonomy was developed around the following three categories: organizational structure, functional or reinforcement properties, and psychosocial characteristics/organizational climate. The remaining three Moos dimensions were de-emphasized, since their relevant characteristics were highly redundant with sub-dimensions of the categories included or else were not relevant to the typical work environment. For example, the ecological dimensions such as weather and topography are not very relevant to the vast majority of work environments and to the extent that they are, the dimension is addressed by the reinforcement properties of "physical comfort." The new synthesized taxonomy is shown below.

I. Psychosocial Characteristics/Organizational Climate

A. Relationship Dimensions

1. Involvement
2. Peer Cohesion
3. Supervisor Support



B. Personal Growth Dimensions

1. Autonomy
2. Task Orientation
3. Work Pressure

C. System Maintenance and System Change

1. Clarity
2. Control
3. Innovation
4. Physical comfort

II. Reinforcement Properties

A. Achievement

B. Safety

C. Comfort

D. Status

E. Altruism

F. Autonomy

III. Organizational Structure/Constraints

A. Structure

1. Size of organization
2. Centralization
3. Organizational levels
4. Line and staff hierarchies
5. Span of control
6. Shape: tall or flat
7. Size of unit

B. Constraints

1. Cognitive workload
2. Social workload
3. Physical workload
4. Availability of information
5. Availability of equipment and supplies
6. Availability of help from others
7. Availability of training/skill maintenance
8. Job change
9. Job uncertainty

As mentioned, the taxonomy has three main parts, each corresponding to a Moos category. The first category, psychosocial characteristics/organizational climate, is identical to the dimensions of the Work Environment Scale (1981) that was mentioned earlier and is based on extensive empirical investigation by Moos and his colleagues at Stanford University. This category also has the advantage of being subdivided into the three more general dimensions: relationship, personal growth, and system maintenance and system change. Insel and Moos (1974) have shown these to reasonably and adequately account for all aspects of organizational climate, and have further shown the striking correspondence between these dimensions and those of other investigators such as Stern (1970).

The second main category, reinforcement properties, includes six sub-dimensions that were derived from clustering the Theory of Work Adjustment occupational reinforcers (Dawis, Lofquist, Henly, & Rounds, 1979/1982). These broader reinforcement dimensions are based on the following clusters of the 21 occupational reinforcers:

1. Achievement: Includes Authority and Achievement
2. Safety: Company Policies, Supervision - Human Relations, and Supervision - Technical
3. Comfort: Activity, Variety, Independence, Compensation, Security, and Working Conditions
4. Status: Advancement, Recognition, Authority, and Social Status
5. Altruism: Co-workers, Moral Values, and Social Service
6. Autonomy: Responsibility, Creativity and Autonomy

The third category in the taxonomy, organizational structure/constraints, is synthesized from several sources. The structural dimensions are derived from an extensive review of the literature by Porter and Lawler (1965) in which they concluded that these seven dimensions are the important structural characteristics on which organizational environments differ. The environmental constraints are synthesized from the taxonomies of Peters, O'Connor, and Rudolf (1980), Dunnette (1983), Borman, Roberson, and Rose (1984), and Schneider (1984). The nine constraint dimensions appear to be the common factors from these taxonomies that adversely affect an individual's capacity to perform the job in an optimal manner.

To summarize, a total of 10 environmental taxonomies that focused on different aspects of all possible environments were examined in order to synthesize a relevant yet comprehensive work environment taxonomy. The new taxonomy includes three principal categories as well as numerous sub-dimensions. The work environment climate, its reinforcing properties, its structure, and its constraints are all included in order to optimally account for the environment's effects on work performance. Finally, since the new taxonomy is based on extensive empirical research and the best and most current conceptualizations of the environment, it can be expected to comprehensively and accurately apply to a wide range of jobs.

## Environmental Effects

The preceding discussion of environmental taxonomies has illustrated the vast number of environmental variables, and the myriad of ways in which the environment can be conceptualized. Because this array of variables is so large and also because research into environmental effects is still somewhat in its infancy, many variables have received little or no research attention. Therefore, three broad classes of environmental variables are discussed in the following section, representing each of the three main categories in the environmental taxonomy. In addition, the effects of more specific environmental variables are discussed in Chapter IV as they apply to the process of stress.

Culture. Currently, one of the most visible areas in the literature on organizational effectiveness has to do with the impact of an organization's culture (or climate) on its employees' behavior. Culture refers to the shared values and guiding concepts of an organization in its day-to-day operation. As such, the term "culture" is nearly synonymous with the psychosocial aspects of the work environment in Section I of the proposed environmental taxonomy. Culture thus includes the employees' relationships with others, the opportunity for personal growth, and the manner in which the organization is maintained or changing.

One of the best known books to investigate the topic of organizational culture is "In Search of Excellence" by Peters and Waterman (1982). In these authors' enquiry into the psychosocial environments that are promulgated by America's best run corporations, a number of parallels were found. The following is a sampling of the kinds of environments that apparently do most to foster involvement and high performance on the job. Because the evidence cited is somewhat anecdotal, however, these relationships might best be thought of in heuristic form.

First, an organization that is productive is one that is disposed towards action. In order to perform effectively and remain satisfied, workers need to feel that they are not stagnant, that they can act rapidly to meet changing demands. Similar to this is an emphasis on employee autonomy, an atmosphere that encourages the showing of initiative. A second heuristic that applies to developing an effective working environment involves treating organization members as individuals, adults, even members of the family. It is through such action that peer cohesion and job involvement occur, which then engender more of the same. Finally, the environment should be characterized by a clear set of goals, goals that are stable yet simple enough not to be diluted. These goals foster a sense of clarity and control for members of the organization, and give them a feeling of security and meaning.

Although, as mentioned, the Peters and Waterman (1982) approach is largely anecdotal, their findings do show that an organization's culture can exert a powerful influence on the way in which its employees behave. Presumably, if companies that did not encourage such an environment were investigated, reliability of performance would be much more of a problem. Future more rigorous research on the effects of various psychosocial environments is clearly needed, however, in order to support this assertion.

Reinforcement Properties. Although there is overlap between the psychosocial environment and the reinforcers present in the environment, reinforcement properties are distinct in that they are often more explicitly associated with the satisfaction of an individual's vocational needs. In other words, a set of reinforcers are those aspects in a job that may satisfy one individual's needs but not another's; thus, there is not one optimal environment. How optimal the environment is in fostering satisfaction and reliable performance depends upon how closely it corresponds to the individuals who are working in it. This idea, which reflects the basis of the concept of interactionism, is also the heart of the Theory of Work Adjustment (TWA; Dawis, Lofquist, & Weiss, 1968).

The TWA, which was mentioned in Chapter II in regard to vocational needs, specifies a procedure for assessing the reinforcers in the environment through an Occupational Reinforcer Pattern (ORP). This pattern includes the twenty-one reinforcers that were given earlier in the discussion of environmental taxonomies. In order to determine the levels of these reinforcers in a given job, ratings are made by job experts as to the relative presence or absence of each reinforcer. The resulting ORP can then be used in conjunction with vocational needs to make predictions about how satisfied and satisfactory a worker is likely to be in this work environment.

Rounds (1981) has reviewed the results of eleven studies from the period 1968 to 1981 that investigated the relationship between need-reinforcer correspondence and job satisfaction. He draws the following conclusions: 1) Need-reinforcer correspondence indices have been found to have a consistent, significant relationship with job satisfaction. 2) The relationship between correspondence and job satisfaction ranges from .18 to .42 with the use of a profile shape index. 3) Studies using a longitudinal design have resulted in the best predictions of job satisfaction. This last finding suggests that environmental reinforcers are most effective when followed over extended periods of time. Thus, such factors as the status or security of a job represent rather enduring qualities that have consistent importance to an employee. It also seems likely that these factors increase performance reliability as well as job satisfaction, although this has not been empirically investigated.

Organizational Structure. The final section of our environmental taxonomy deals with organizational structure and constraints, but since a number of the constraints are discussed in Chapter IV, we focus here only on structure. Each of the seven aspects of organizational structure will be described and their effect on worker behavior summarized. The first organizational property, total size, is distinguished by its scope from a later property, size of work unit. Often this distinction has not been made in the literature (Porter & Lawler, 1965), yet the two variables could easily lead to totally different outcomes. Very little research has examined the effects of total size and results are somewhat conflicting. Some evidence suggests that large organizations have lower morale than small ones, but the relationship is not strong. By contrast, the findings are quite clear that larger work sub-units have lower job satisfaction, and higher absenteeism, turnover, and numbers of disputes than their smaller counterparts. Thus, although size may have some negative effect at the organizational level, it is a much more important

variable as it relates to sub-units (Payne & Mansfield, 1973).

With regard to the organizational level at which an individual works, studies apparently agree that those at higher levels are generally more satisfied and involved than those at lower levels, a rather predictable finding. The evidence is less clear, however, on the effect of working in a line or a staff position. It appears that line personnel, who are more in the direct chain of command, have higher job satisfaction and lower turnover than staff workers, who are primarily specialists and in auxiliary functions. This relationship is often affected by other factors though, a situation that also makes it difficult to draw any conclusions about the effect of span of control. Such factors as the type of production of the organization appear to moderate these relationships in complex ways, and thus the limited amount of research is insufficient to justify generalizations about these two organizational properties (Porter & Lawler, 1965).

The two final aspects of organizational structure to be discussed are perhaps the best known. Both degree of centralization and organizational shape are variables that have generated a lot of speculation and some research since Alfred Sloan at General Motors first popularized the move to decentralization (Chandler, 1956). Fantastic claims have been made for the flat, decentralized organization, including better decision-making, higher job satisfaction, and improved performance. The empirical research, however, is more cautious in its conclusions. It does appear that flat organizations are preferable to tall when the size of the company is small, but this advantage may be reversed in a larger firm. With regard to centralization, generalized effects are also somewhat unclear. Again, the particular type of organization under consideration has much to do with the optimal level of centralization for it. Size, market, and other organizational factors can each affect the final results obtained.

Summary. The preceding discussion of organizational environments contains a rather heuristic flavor, a depiction of the topic in somewhat general and conditional terms. This description is also true of the literature on which the discussion is based. It appears that the research in this area, much of which is relatively recent, has been largely unable to disentangle the complexity of variables associated with the environment. As a result, the findings that are available are either vague and highly general or else characterized by weak relationships that have numerous qualifiers or exceptions. No doubt the reason for this state of affairs is, at least in part, a lack of understanding of how environmental variables are related to each other, a problem that then limits learning about their relationship to behavior. In addition, people differ dramatically in their perception of the same environment, and also in the aspects of the environment to which they choose to attend. Nevertheless, some rather tentative statements can be made about the kind of work environment that seems to contribute to reliable performance.

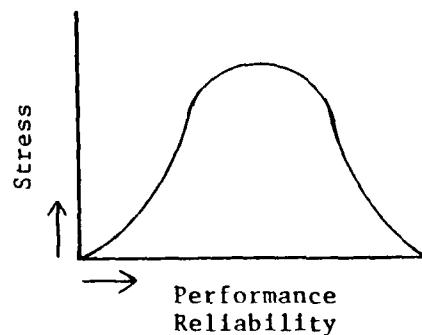
With respect to organizational culture, the environment should be one that allows workers to take action and show initiative, it should treat workers as individuals worthy of trust and respect, and it should be driven by goals that are clear, simple, and stable. The reinforcers

that it offers should correspond closely to the needs of either its present workers or of the workers that it would like to employ. Also, its structure should include relatively small sub-units and a level of centralization that permits autonomy yet does not sacrifice information flow. This set of conclusions, which are admittedly vague and somewhat pie-in-the-sky, might best be considered as a set of heuristics, a series of statements that appear to be true but have not been (and perhaps cannot be) proven. In the next chapter, somewhat more rigorous research is described to illustrate the effects of both the environment and the person in the process of stress. It will be seen that even though stress also is poorly understood, it is a variable that nicely illustrates the interaction in human behavior, particularly in unreliable behavior.

## CHAPTER 4

### STRESS

In previous sections, the impact on behavior of both personal traits and the environment have been discussed in a somewhat general sense. This section confines itself to the literature that deals with stress, and examines stress from the interactionist perspective of joint person and environment effects. The concept of stress is particularly important to the present discussion since stress has so often been linked with the reliability of human performance. This relationship may be thought of in terms very similar to the well-known Yerkes-Dodson law (1908), as shown below:



The curvilinear relationship illustrates that a certain amount of stress is necessary in order to obtain optimal reliability of performance, but that beyond a threshold, it actually impairs reliability. For example, a certain amount of stress will likely cause a security guard to be more vigilant and thus more reliable in his/her performance. If there is too much stress, however, the guard is likely to be less than optimally reliable because the stress is competing with his/her capacity to stay vigilant. Although the above relationship is only one way of conceptualizing the impact of stress on performance, it is clear that the direct and indirect effects of stress are of tremendous importance for personal and organizational outcomes. To begin our discussion of this critical area, the stress concept itself is first considered.

#### The Concept of Stress

The last twenty years or so have seen the emergence of stress as a central concept in psychological thinking, a concept that has been studied in many different ways by a wide range of investigators. Associated with this heterogeneity of research has been a degree of conceptual confusion, a lack of consensus on exactly what is meant by the term "stress" (cf. Sharit & Salvendy, 1982). The concept appears to be defined in whatever way happens to fit the particular investigator's framework rather than by reference to any ongoing explication of the concept. Nevertheless, certain formulations are more recognized than others.

Perhaps the first formal definition of stress was that of Cannon who in 1914 used the term to refer to states resulting from emotional events. He subsequently developed what is known as the engineering concept of stress in which the force impinging on a person is similar to the way in which weight from automobiles creates pressure on a bridge (Cannon, 1935). Another well-known formulation has come from the work of Selye (cf. 1956), a physician, who considers stress to be the non-specific physiological responses of the body to any demand. These demands, which include both physical and psychological properties of the environment, are thought to trigger a pattern of physiological adaptation referred to as the General Adaptation Syndrome. The G.A.S. will be described in more detail later in this chapter.

Other conceptualizations of stress have a more psychological flavor. French, Rodgers, and Cobb (1974) suggest that stress is the result of an incongruity between a person and the environment. This "misfit" can be produced in two ways: an incompatibility between a person's knowledges, skills, and abilities, and the demands of the job, or the failure of the environment to meet one's needs. Beehr and Newman (1978) postulate that stress (as related to work) is a circumstance in which job related factors interact with the job incumbent to change his/her physiological and/or psychological condition. This change then results in a deviation from normal functioning.

A third psychological conception of stress is that of Lazarus (cf. 1980), who considers cognitive appraisals of the situation and coping mechanisms as important components of stress. According to this view, an individual continually searches, examines, and evaluates the environment for cues related to personal well-being. Cues are evaluated on the basis of how threatening they are, from extremely threatening to benign. If one's abilities are perceived to be exceeded by threatening demands, stress is experienced. The stress response is inhibited, however, if the individual's perceived ability is judged at least equal to the task.

A final conceptualization of stress, suggested by Schuler (1982), defines stress as a perceived dynamic state involving uncertainty about something important. This dynamic state may be related to opportunities to fulfill important needs and values, constraints that prevent need/value fulfillment, or environmental demands such as noise, heat, or toxic chemicals. Like the other psychological formulations, Schuler's definition adopts the interactionist position in explaining stress as an outcome of both person and environment.

It can be seen from the above that there is considerable lack of agreement among researchers as to exactly what stress is. Despite the absence of conceptual clarity, however, there is an increasing amount of evidence linking stress to a number of important outcomes. It appears that the need to use stress-related information outstrips any desire to more precisely define the concept. As a result, a number of more concrete indices of stress have been developed and are currently in use in stress research. These measures may be grouped in three areas: behavioral, psychological, and physiological.



Behavioral Indices of Stress. Behavioral indices are those actions that are made more likely or frequent by the presence of stress. As mentioned earlier, stress may have a positive effect on behavior, perhaps by energizing a somewhat lackadaisical person or situation. It is the dysfunctional behaviors associated with stress that have received more attention, however, and these behaviors dominate the listing below:

Performance inefficiency	Psychopathy
Errors/accidents	Self-destructive behavior
Target (non)detection	Sleeping disturbances
Reduced productivity	Suicide
Reduced job involvement	Deterioration of relationships
Unreliability	Drug use
Absenteeism	Alcohol use
Attrition	Hypervigilance
Withdrawal	Impaired decision-making
Sabotage	

Psychological Indices of Stress. Unlike behavioral indices, psychological indicators of stress may not be as readily observable since they primarily address the inner state of the individual. Perhaps the best known psychological symptom of stress is anxiety, and forms of psychopathology such as neurotic disorders and psychoses may also be influenced by stress. As is the case with behavioral indices, several of the psychological indicators apply primarily to the workplace, and are indicative of the pressure experienced in modern jobs. A listing of psychological signs of stress is given below:

Job tension	Job-related threat to well-being
Boredom	Job (dis)satisfaction
Depression	Apathy
Irritability	Fatigue
Anxiety	Frustration
Resentment	Guilt
Neuroticism	Shame
Self-confidence (lack of)	Temper
Self-esteem (lack of)	Moodiness
Burnout	Loneliness

Physiological Indices of Stress. Physiological indices of stress are generally divided into two types of responses: short-term or long-term. Short-term responses occur immediately after contact with a stressor (or stress-producing agent), while long-term indicators are associated with prolonged stress. Listed below are the 31 most frequently used physiological measures of stress, both short and long term:

Headaches	Coronary heart disease
Digestive difficulties	Brain waves
Eliminative functioning difficulties	Serum Lipids
Hyperuricemia	Free fatty acids
Gout	Serum cholesterol

Rheumatic disease  
Dermatological symptoms  
Diabetes  
Ulcers  
Respiratory ailments  
Skin conductance  
Respiratory rate  
Hypertension  
Blood pressure  
Heart rate  
Myocardial infarction

Serum glucose  
Serum uric acid  
Adrenaline  
Noradrenaline  
Cortisol  
Amino acids  
Corticosteroids  
Prolactin  
Thyrotropin  
Growth hormone

Nearly all of these physiological indicators are obtained in one of three ways: 1) biochemical analysis of blood, urine, and parotid fluid, 2) examinations of cardiovascular functioning, or 3) electrophysiological recordings. Of the biochemical indicators, levels of adrenaline and noradrenaline are among the most often collected since they provide information concerning arousal and adaptation to stress. Serum cholesterol and serum lipids have also been studied extensively since they are thought to be precursors of coronary heart disease (cf. Glass, 1977). Cardiovascular response to stress is most often measured through pulse rate and blood pressure. Finally, the primary electrophysiological recordings are the electromyograph (EMG), the galvanic skin response (GSR), and the electroencephalograph (EEG). These index respectively the amount of skeletal muscle tension, the change in skin conductance due to arousal, and the electrical activity (waves) of the brain.

After considering the number and types of variables that are considered to be indices of stress, it should be noted that no one variable is thought to be the best indicator. In fact, Tache and Selye (1978) warn against this very idea, suggesting instead that stress may well be multifaceted, and that multiple indicators are the best solution to the measurement of stress levels. In addition, the indicators that are optimal for a certain situation or question may well be different in another setting or investigation, again suggesting the utility of multiple indicators.

#### Models of the Stress Process

Model construction is an important step in stress research for several reasons. First, a model often provides a better definition of the concept by suggesting a framework of how the stress process actually takes place. Second, the kinds of stressors that exist and the outcomes of these stressors are made explicit. Third, a model can propose factors such as personal characteristics that moderate response to stress. Finally, coping mechanisms can be suggested as a way of dealing effectively with high levels of stress.

Selye's General Adaptation Syndrome (G.A.S.). One of the first and best-known models of the stress process was developed by Dr. Hans Selye

during efforts to discover a new sex hormone. As mentioned earlier, Selye considers stress to be non-specific physiological responses of the body to any demand, a definition that stemmed originally from his research with rats. Selye observed that when rats were subjected to conditions such as extreme thermal stimuli, injections of organ extracts, or forced muscular activity, the rats displayed a consistent set of changes. This "triad of morphological changes" (Selye, 1956) consisted of adrenal cortical enlargement, thymic atrophy, and gastro-intestinal lesions, and was considered to be due to the initial component of what Selye (1956) referred to as the General Adaptation Syndrome (G.A.S.).

The G.A.S., which can be understood through reference to Figure 4.1, is a three-stage response of the body to demanding (or stressful) stimuli. The initial phase, the alarm reaction, is a general "call-to-arms" that includes decreased metabolism and blood pressure, as well as enlargement of the brain's adrenal cortex and increased secretion of corticoid hormones. The arousal of this first stage results from a series of neurophysiological changes initiated by the hypothalamus, that are thought to prepare the body for "fight or flight." Since the organism cannot remain in the alarm stage indefinitely, it will usually deal with prolonged stress by entering stage two - resistance. The resistance stage refers to a specialized adaptation. During this phase, it is thought that the bodily system most capable of dealing with the stressor predominates. Resistance, however, can result in certain costs to the body, such as depletion of corticoid-containing lipid storage material. Since defenses are mobilized to fight a particular stressor, resistance to others - particularly infectious agents - will be lowered. Thus, "diseases of adaptation" may occur during this stage (Selye, 1956).

If the stressor continues, the final phase of the G.A.S. - exhaustion - could be realized. It is hypothesized that this stage is characterized by a general debilitation of the organism due to its failure to deal effectively with the stressor. The most extreme outcome of this failure (and the exhaustion phase) is death. Adaptability to stress appears to be a limited quantity that can be partially restored through sleep and rest, but that ultimately accumulates to constitute the signs of aging (Selye, 1983).

Other Models of Stress. In contrast to Selye's physiological model of stress, a number of other models have been proposed that emphasize psychological factors and are perhaps more relevant to the workplace. In one such model (see Figure 4.2), House (1974) emphasizes social antecedents. According to House, social conditions "conducive" to stress can, in some instances, result in the perception of stress. Whether or not these perceptions result in immediate responses or more long-range outcomes depends on defense mechanisms and the conditioning effects of the person and/or the environment. Unfortunately, because this model only includes social conditions as antecedents of stress and assumes that perceptions are a necessary condition, it fails to recognize that other kinds of situations may also result in stress.

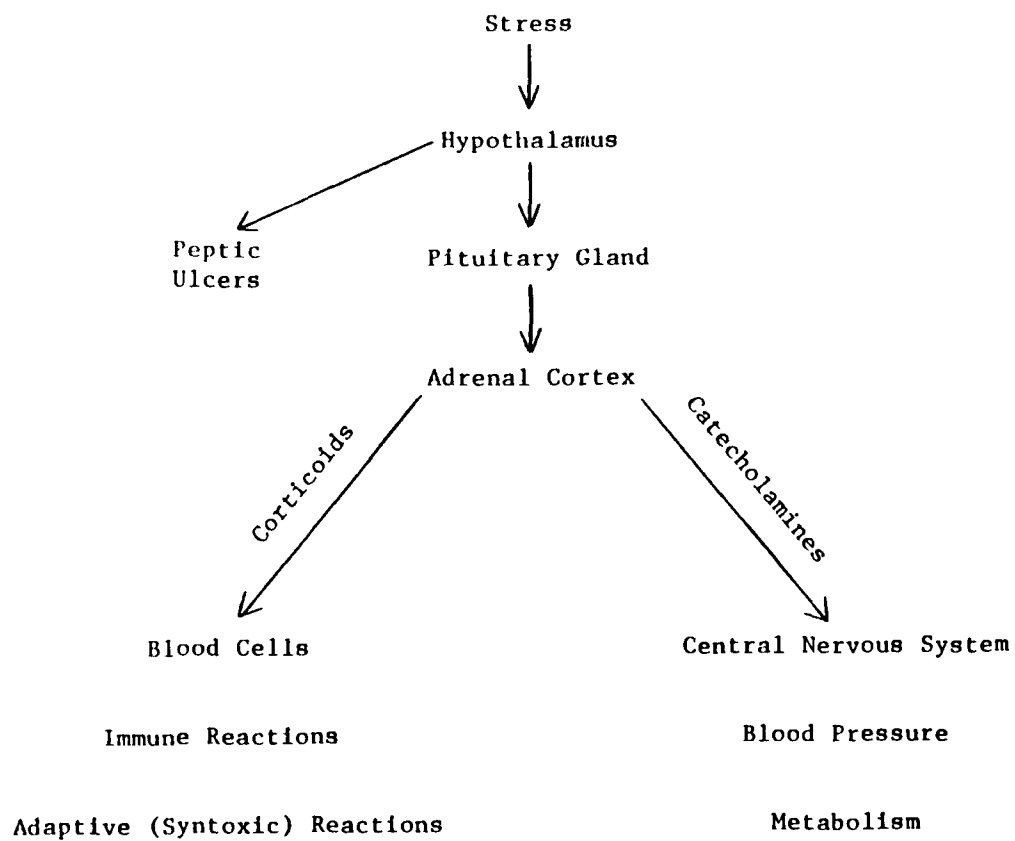
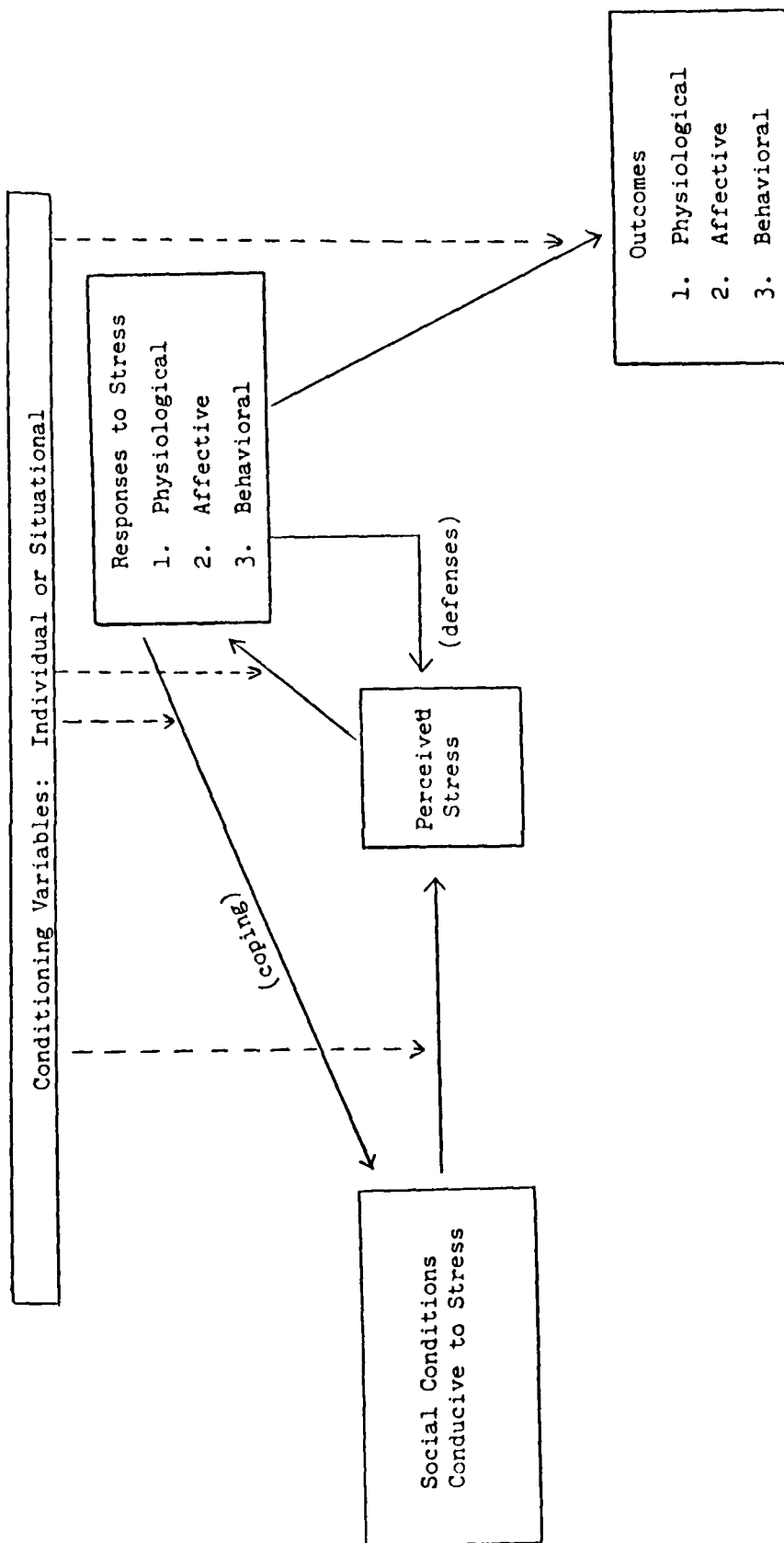


Figure 1. Selye's general adaptation syndrome (G.A.S.).



A paradigm of stress research. Solid arrows indicate presumed causal relationships between variables. Dotted arrows indicate an interaction between variables in predicting outcomes (after House, 1974).

House, J. S. Occupational stress and coronary heart disease: A review and theoretical integration. Journal of Health and Social Behavior, 1974, 15, 12-27.

Figure 2. A paradigm of stress research.

A more comprehensive model than the one presented by House is described in Beehr and Newman (1978). Their model, formulated to encompass the job stress-employee health domain, can be seen in Figure 4.3. According to this configuration, seven facets are seen to be important.

The environmental facet incorporates those elements of the work environment hypothesized to be involved in stress. Examples of these elements include characteristics of roles, tasks, and organizations. The personal facet suggests that many personal characteristics, behavioral tendencies, etc., are important determinants of individuals' experiences with stress. The process facet includes those physiological and psychological processes which serve to link the environment and the individual to one another and to the two consequences facets.

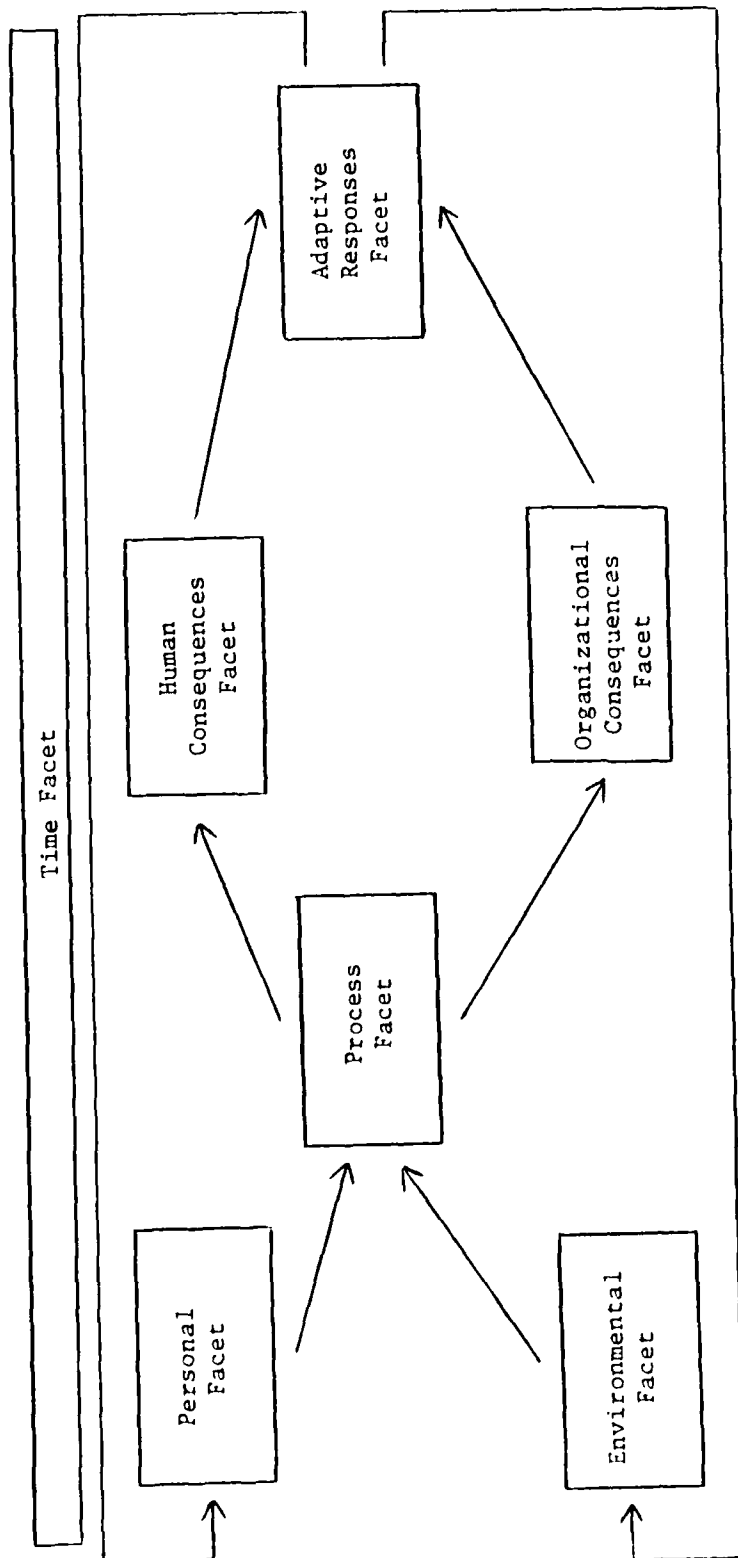
Two facets - organizational and human consequences - are seen to be direct outcomes of the process facet. Human consequences include those variables related to physical and mental health, and antisocial behavior, while organizational consequences are related to elements of organizational effectiveness (e.g., productivity, withdrawal behaviors). The adaptive responses facet incorporates those elements considered to be related to employee well-being. Examples would include not only individual coping mechanisms (e.g., stress management skills), but also organizational strategies (e.g., refining selection and placement criteria, job redesign) for reducing stress. The final facet, time, is seen to permeate all of the others: that is, some variables may not exhibit their influence immediately. An example would be the time lag in the development of stress-related physical disorders.

A third model of stress, by Ivancevich and Matteson (1980), is shown as Figure 4.4. This model, except for its failure to include coping responses, is similar to the one presented by Beehr and Newman. An important conceptual advance, however, is the delineation of the influence of several types of stressors (i.e., individual, group, organizational) on the state of the individual.

The models presented above are, for the most part, useful for describing the kinds of variables likely to be related to stress in the work place. Unfortunately, these models are more theoretical than operational in the sense that they do not provide a workable method for measuring stress at work (Sharit & Salvendy, 1982). Therefore, we turn now to a discussion of the literature that has investigated specific types of stressors and their impact on performance, both in general and in organizational settings.

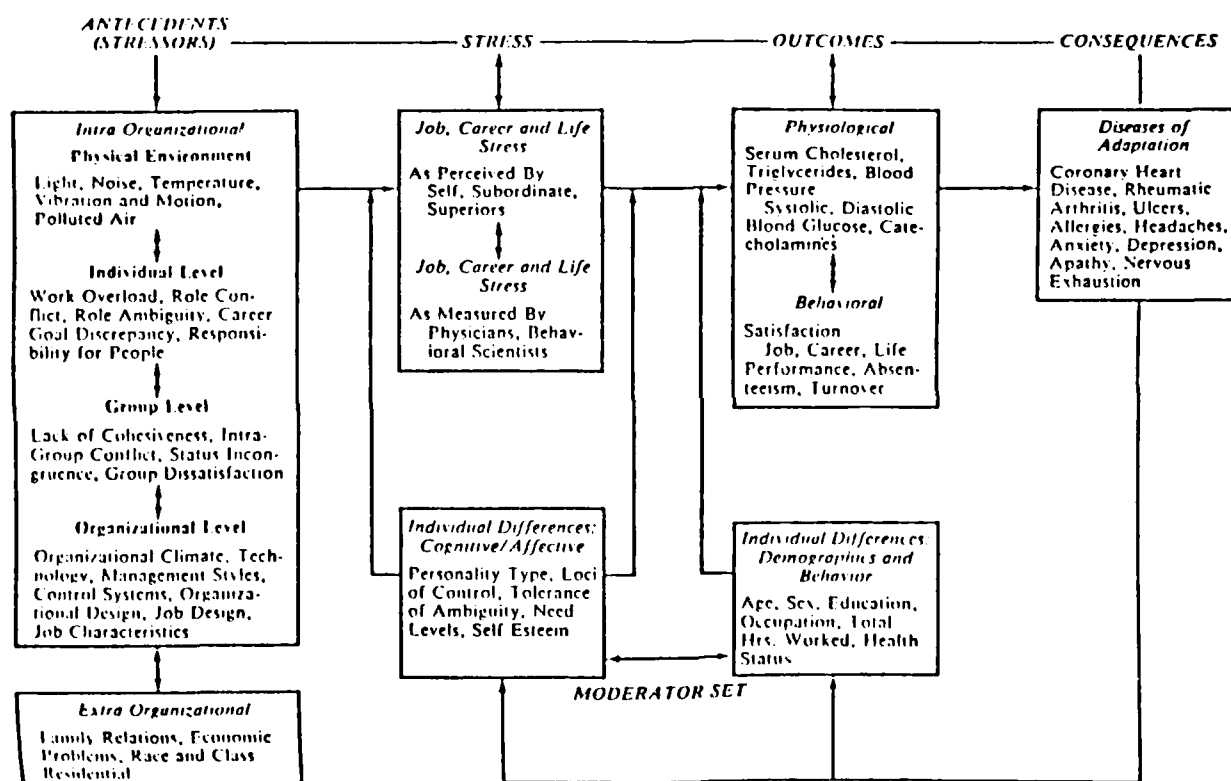
#### Environmental/Stressors and Their Effects

Despite obvious differences among the aforementioned theories and models of stress, they do appear to have several similarities. All of the schemata agree that the stress process begins with an eliciting event, although they may disagree as to the nature of this event. Selye's formulation, even though emphasizing environmental stimuli, does not



From: Beehr, T. A., & Newman, J. E. Job stress, employee health, and organizational effectiveness:  
A facet analysis, model, and literature review. Personnel Psychology, 1978, 31, 665-699.

Figure 3. A facet model of stress.



From: Ivancevich, J. M., & Matteson, M. T. Stress and work: A managerial perspective. Glenview, Illinois: Scott, Foresman and Company, 1980. (Reprinted by permission).

Figure 4. A person-environment fit model of stress.



deny the importance of the perceptual processes germane to the frameworks of such researchers as Lazarus and House. Therefore, it seems reasonable to include both perceptual processes and environmental events as primary stimuli or stressors. These two classes of variables are analogous to Beehr and Newman's environmental and process facets, respectively, and can also be considered as objective and subjective measures of the environment in the tradition of Murray's (1938) conception of alpha and beta press. Although the distinction between the two may sometimes be blurred, the more objectively measured stressors are discussed first.

Noise. Exposure to certain kinds of noise is known to result in a number of undesirable outcomes. Besides findings that spending time in noisy environments may result in hearing impairments, a number of studies have suggested that workers exposed to noise may also show signs of physiological stress, report more negative affect, and perform less efficiently than those in quiet surroundings. Folklore also suggests that there is a long-term effect of noisy work environments on physical health, but the empirical evidence for this position is somewhat equivocal (Jones, 1983).

Jansen (1961) found, in an investigation of over one thousand steelworkers, that disturbances of peripheral circulation and equilibrium, as well as irregular heartbeats, were associated with exposure to loud noise. However, Jones (1983) cautions that these findings may not be entirely attributable to the noise, as other environmental stressors (e.g., heat, vibration, toxins, danger) tend to covary with noise. Several other studies, while probably subject to the same criticism, also found support for a relationship between noise and impaired physical health. Corso (1959) and Stamburgh (1950) found that exposure to loud intermittent noise results in an increased pulse rate. Along this same line, Jonsson (1978) found a relationship between chronic noise exposure and hypertension.

Two additional studies provide further support for a relationship between noise and physical symptomatology. Ohrstrom and Bjorkman (1978) found that workers in noisy manufacturing plants reported greater fatigue than those in less noisy plants. Also, Cohen (1974) showed that workers in high noise areas ( $\geq 95$  decibels, db) were more frequently absent due to accidents, illness, and confirmed medical problems than workers in low noise areas ( $\leq 80$  db). This link between noise and physical ailments was strengthened further by the results of a subsequent study in which Cohen (1976) found that the introduction of ear protection resulted in a reduction of medical problems.

There is a paucity of research on the effects of noise in work settings on more psychologically oriented variables. In one such study, Jansen (1961) found evidence for a relationship between being in a noisy work environment and the experience of emotional tension. Edsell (1976) found that the behavior of a group of individuals working at a competitive game was judged as more threatening, disagreeable, or disorganized when the

interactions occurred in a noisy environment as opposed to a quiet one. Bull, Barbage, Orandall, Fletcher, Lloyd, Ravenberg, and Rockette (1972) suggested that being in a noisy environment might reduce one's tolerance for ambiguity. Finally, Siegel and Steele (1980) reported that, when individuals were required to make judgments concerning fictitious persons while simultaneously being exposed to noise, extreme ratings were more likely to be given. It is interesting to note that the extreme ratings were not all negative; positive attributes of individuals also were overemphasized.

With regard to the effect of noise on performance, a large number of studies reviewed by Cohen (1980) have demonstrated that exposure to noise often results in performance deficits. For example, Weston and Adams (1932, 1935) demonstrated that, when weavers wore ear plugs, their performance increased over ten percent. Also, Broadbent and Little (1960) found that workers assigned the task of perforating motion picture film produced more errors at noisy stations than at quiet ones. In laboratory studies, Broadbent (1953) found that exposure to 100 decibels of white noise resulted in reduced accuracy in repetitive serial responding, but only during the last half of a 30-minute session. Similar results were obtained by Corcoran (1962) and Wilkinson (1963). Sanders (1961), using the same dependent measure, but a softer noise level (75 db), also found that performance variability was affected during the last part of a 30-minute test. Jerison (1959) measured performance on a vigilance task during exposure to 110 db white noise and found that noise resulted in an increase in the number of signals missed, but not until the final third of a one and one-half hour test.

Despite the general conclusion by some researchers that noise results in performance decrements, Poulton (1976) has reviewed results from 38 experiments which suggest that noise exposure can actually increase performance. It would seem, given these disparate findings, that the effects of noise do not lend themselves to a simple generalization (Jones, 1983). Future research in this area might investigate whether the relationship is moderated, perhaps by individual differences in physiological or psychological variables.

Heat and Cold. Extreme thermal environments can be highly stressful to human beings since they require the body to make several significant physiological adjustments, adjustments that may also have impact on an individual's performance or emotional state. Acclimatization to heat, which initially involves an increase in heart rate, ultimately results in a lowering of body temperature and heart rate, while one's sweating mechanism becomes more efficient. Acclimatization to cold environments, on the other hand, results largely in increases in some metabolic processes. The ultimate goal, in either case, is to minimize the amount of physiological strain on the acclimatized individual (Macpherson, 1974). An example of this adaptation to two heat stressors (140 F and 160 F) was reported by Iampietro, Chiles, Higgins, and Gibbons (1969). Heart rates were observed to steadily increase during exposure to these two conditions; the maximums recorded were 114 and 132 beats-per-minute,

respectively. During exposure to 140°F (60°C), adaptation occurred after approximately 40 minutes, while heart rate adaptation in the 160°F (71.1°C) condition occurred after approximately 48 minutes. A similar increase in heart rate in response to heat was reported by Wenzel and Ilmarinen (1977) and Epstein, Keren, Moisseiev, Gasko, and Yachin (1980).

Exposure to heat also produces biochemical and psychological changes. Francesconi, Fine, and Kobrick (1976) reported that when subjects were placed in a hot wet environment (35°C and 90 percent relative humidity) for seven hours, significant increments in plasma levels of cortisol, dopamine-beta-hydroxylase, and uric acid were obtained. However, cholesterol and cyclic AMP levels were unaffected. Gafafer (1964) reports that heat exposure also results in feelings of anxiety, irritability, general lassitude, morale decrements, and an inability to concentrate.

The influence of exposure to hot environments on physical work output and performance is well-documented (Ramsey, 1983). Factors affecting physical capability to do work in the heat include general physical fitness and health, age, sex, nutrition, and the mental willingness to work in the heat. Even under the positive conditions of high physical fitness, high strength, and high levels of health and motivation, however, continuous activity results in fatigue more quickly in the heat than in normal conditions. While this may seem intuitively obvious, Ramsey (1983) points out that the precise effects of heat are actually difficult to pinpoint because of complex interactions between temperature, the task, and the person.

Numerous studies have reported that exposure to heat results in perceptual-motor or cognitive performance decrements: so many, in fact, that Poulton (1976) refers to the "well-known" rule that exposure to uncomfortable levels of heat reliably degrades performance. In support of Ramsey's (1983) contention that performance is the result of complex interactions, however, Poulton cites results from nine experiments that suggest that under some circumstances, heat may actually improve performance. Interestingly, subjective estimates of performance in the heat have been seen to be negatively correlated with actual performance. Allnut and Allan (1973), for instance, found that 15 of 20 trainee pilots worked faster when their body temperature was elevated. However, when questioned at the end of the experiment, 10 of the 15 estimated that their performance was slower in the heat.

The failure to find consistent effects of heat on performance has been postulated to be the result of the arousal produced by the heat and the task demands placed on the subjects. That is, when tasks which involve speed or vigilance are required to be performed in the heat, the associated arousal may actually result in performance increments (Poulton, 1976). Thus, the results presented in the heat stress literature, not unlike those reported above in the section on noise, do not suggest a readily interpretable set of conclusions. While some of the studies suggest that physiological changes can be reliably induced by heat

exposure, performance cannot be predicted with the same accuracy.

The physiological effects of exposure to cold environments are somewhat different from that of exposure to heat. Rather than increasing the blood flow to the skin as is done in response to heat, the body reacts to cold by directing the majority of blood flow to the brain and other vital organs. Tuttle and Davis (1978) point out that the cold pressor test, which involves placing a subject's hand or foot into a pan of ice water, is a reliable experimental method for inducing several indices of stress-increased heart rate, increased blood pressure, and changes in skin conductance. Perhaps most relevant among the bodily changes related to cold, however, is the loss in manual dexterity associated with stiffness and restriction of joint movement (Ramsey, 1983).

This loss of manipulative ability has often been thought responsible for much of the performance decrement typically observed on manual tasks in cold conditions (cf. Provins & Clarke, 1960). A study by Lockhart (1966) challenged this hypothesis by manipulating hand temperature and body temperature independently, and found that manual performance decreased even in the warm hand/cold body condition. Gaydos and Dusek (1958) found that performance was equally poor when either the hands alone or the entire body was exposed to cold. Therefore, the negative impact on manual performance of exposure to cold seems to be a rather generalized effect, not confined to a situation in which only the hands are chilled.

The effect of cold upon both manipulative and mental performance tasks was studied by Horvath and Freedman (1947). Performance of 22 subjects who were housed in a  $-30^{\circ}\text{C}$  ( $-20^{\circ}\text{F}$ ) temperature was measured for up to two weeks. Significant decrements on manipulative tasks were obtained, but mental performance was not affected. In another study conducted on-board ship in the Arctic, Poulton, Hitchings, and Brooke (1965) found that subjects responsible for keeping watch took longer to report activity and were less accurate in their reports at lower body temperatures. Angus, Pearce, Bugnet, and Olsen (1979) studied the effect of cold exposure on the vigilance performance of men working and sleeping under Arctic conditions for 16 days. Reaction times increased until the 14th day when they began to show a decline. The percentage of correct detections, however, steadily increased during Arctic exposure. Finally, Telchner and Wehrkamp (1954) investigated tracking performance during exposure to a range of environmental temperatures --  $13^{\circ}\text{C}$ ,  $21^{\circ}\text{C}$ ,  $30^{\circ}\text{C}$ , and  $38^{\circ}\text{C}$  ( $55^{\circ}\text{F}$ ,  $70^{\circ}\text{F}$ ,  $85^{\circ}\text{F}$ , and  $100^{\circ}\text{F}$ ). Interestingly, they found performance decrements at temperatures below  $21^{\circ}\text{C}$  ( $70^{\circ}\text{F}$ ), as would be predicted by optimal level of arousal theory, which states that performance is less proficient at extreme levels of physiological arousal.

Summary. In the preceding pages, the stressful effects of both noise and extreme temperatures have been discussed. It seems clear that both of these stressors are often associated with changes in physiological, psychological, and mental processes, as well as in performance. Although these changes can occur in both a negative and positive direction, the negative changes have typically received more study, sometimes at

the expense of the positive effects of stress. Even more important, the effects of these stressors have not often been considered in the interactionist sense.

Researchers in this area have reported that these stressors do not have constant effects, an outcome that is expected if one recognizes that a particular stressor in the environment is only one factor in any effect observed. The contribution of the person involved must also be considered, as well as other environmental stressors that may be associated with noise and extreme temperature. The point is particularly salient for noise and temperature since they are among the environmental variables that can be most objectively measured; they are perhaps least subject to personal and perceptual bias. By contrast, stressors that will be discussed next such as danger or monotony are much harder to manipulate in any standardized way. Because of these more objective qualities of noise and temperature, it should be easier to study what portion of stress-related outcomes are attributable to these stressors and which to the individual or to other stressors. For the stressors to be discussed next, the subjective environment becomes more important than the objective environment.

Dangerous Environments. The effects of dangerous environments on physiology, affect, and behavior have been studied in several different settings. Among sport and military parachutists, a number of physiological and biochemical variables have been investigated with the evidence obtained from these studies pointing to a general increase in activation during a jump sequence. The indices which have been seen to increase prior to, during, or after a jump are heart rate (Fenz and Epstein, 1967; Shane & Slinde, 1968; Stromme, Wikeby, Blix, & Ursin, 1978), respiration and absolute skin conductance (Fenz & Epstein, 1967), adrenalin and noradrenalin (Bloom, Euler, & Frankenhauser, 1963; Hansen, Stoa, Blix, & Ursin, 1978), growth hormone secretion (Weitzman & Ursin, 1978), blood glucose levels (Eide & Atterås, 1978), hippuric acid secretion and blood glutathione (Basowitz, Persky, Korchen & Grinker, 1955), plasma prolactin, growth hormones, and thyrotropin (Noel, Dimond, Farll, & Frantz, 1976). Additional studies have documented physiological changes that occur in response to the danger of piloting or wartime environments (Berkun, 1964; Balke, Melton, & Blake, 1966; Marchbanks, Hale, & Ellis, 1963; Hale, Hartman, Harris, Williams, Miranda, Hosenfeld, & Smith, 1972; Hale, Storm, Goldzieher, Hartman, Miranda, & Hosenfeld, 1973; Billings, Gerke, Chase, & Eggspuehler, 1973; Hale, Duffy, Ellis, & Williams, 1965).

There is conflicting evidence as to whether exposure to danger results in additional feelings of stress and negative affect. In a study of 486 coal miners, Althouse and Hurrell (1977) found that, when compared with a group of workers on jobs of similar status, miners did not report more subjective experiences of stress. They did, however, experience more negative affect (i.e., anxiety, depression, irritation, and somatic complaints). In Berkun's (1964) experiment, subjects were given the Subjective Stress Scale (a measure which asks the person to choose the

one word that best describes his feelings at the time) subsequent to a stress-inducing situation. On the average, subjects in each of the stress conditions reported experiencing more stress than those in the control conditions.

Besides the effects of dangerous situations on physiology and affect, performance is also influenced. It has been known for sometime that extreme levels of anxiety can severely impair performance. Walker and Burkhardt (1965) reported that during the Battle of Gettysburg in the American Civil War, over 200 rifles were found to have been loaded several times without ever being fired. Similarly, Marshall (1944; 1947) found that, during World War II, only between 15 and 30 percent of the men in combat normally fired their weapons. Moreover, from action to action, the behavior of firers and non-firers seemed to be consistent.

A study by Berkun (1964) also found that subjects who were under stress showed signs of impaired performance. Performance under stress declined on paper and pencil measures of verbal ability and recall as well as in the time that it took to repair a radio or field telephone. In addition, it was possible to predict individual performance under stress by using the Taylor Manifest Anxiety Scale of the Army Classification Battery. Those whose performance declined the most under stress were characterized as having achieved less in their early lives, and had less self-confidence and general aptitude. Finally, studies by Fenz and Jones (1972) and Hale, Duffy, Ellis and Williams (1965) suggest that physiological measures of response to danger are highly related to levels of performance.

Monotony. In contrast to danger which is an obvious stressor, the stressful effects of monotony have been more open to question. It has been well documented that monotony gives rise to negative affect such as feelings of fatigue (Johansson, Aronsson, & Lindstrom, 1978; McDowell & Wells, 1927; Wyatt, Fraser, & Stock, 1929; Wyatt, Landon, & Stock, 1932), boredom (Barmack, 1937; Guest, Williams, & Dewe, 1978), and job dissatisfaction (Caplan, Cobb, French, Van Harrison, & Pinneau, 1975; Ferguson, 1973). What is less clear, however, is whether monotony results in physiological under-arousal or over-arousal, and whether the boredom associated with monotony is stressful.

Investigators such as Berlyne (1960) have argued that monotony results in a state of high arousal, a conclusion supported in two experiments by London, Schubert, and Washburn (1972). Their research found that those in a monotonous vigilance task or repetitive letter writing task had higher galvanic skin potentials and heart rates than those in more interesting tasks. In a critique of this study, however, Thackray (1981) argued that these differences were either inconsistent or of very small magnitude. In a study of sawmill employees, Johansson, Aronsson, and Lindstrom (1978) found that workers on monotonous jobs (e.g., saw and edging equipment operators) reported more boredom than workers on less monotonous jobs (e.g., repairmen and maintenance workers). Of particular interest, though, were the findings that those in the monotonous jobs had higher adrenaline outputs, reported more tension, and

had more of a history of illness. This evidence seems to suggest that workers exposed to monotony exhibit some of the symptoms of stress. Again, Johansson et al. (1978) and Thackray (1981) point out that the jobs in the high monotony group are associated with a number of potential stressors; any one or a combination of which could account for the obtained differences.

A similar study by Caplan, Cobb, French, Van Harrison, and Pinneau (1975) reported somewhat different results. Caplan et al. selected those jobs in which workers reported high levels of boredom (forklift driver, assembler, and machine tender). Workers in these jobs were found to be more dissatisfied, and to report more anxiety, depression, irritation, and health-related problems than workers in less boring jobs. However, none of the other indices of stress measured in this study, either behavioral (smoking, coffee consumption, obesity) or physiological (pulse, blood pressure, cortisol, cholesterol, thyroid hormones, serum uric acid), were found to be higher in the cluster of monotonous jobs as compared with the others studied.

In support of the contention that monotony leads to under-arousal, O'Hanlon (1965) failed to find that catecholamine levels increased while performing a vigilance task for three hours. In fact, one of them - epinephrine, which is also known as adrenaline - decreased along with performance. A subsequent study (O'Hanlon & Horvath, 1973) found similar results after only 60 minutes of a repetitive monitoring task: Adrenaline levels increased initially and then returned to basal levels. This decline in adrenaline was found to be positively related to performance.

Perhaps the most extreme examples of monotonous situations are experiments involving sensory deprivation. In two studies that employed this type of manipulation (Zubek, 1968; Zubek & Schutte, 1966), subjects who experienced seven days of deprivation did not differ from control subjects in terms of catecholamine output. Of interest, though, was the finding that subjects who dropped out of the experiment before it was completed had higher adrenaline levels than those who remained. These findings could be interpreted as meaning that those subjects who perceived the deprivation experiment as most stressful were the ones who displayed withdrawal behavior. Therefore, although it is not clear whether monotony or boredom actually played a role in the decision to quit, the decision might also have been predicted on the basis of adrenaline level.

Several additional studies provide further support for the assertion that monotony typically results in performance decrements and other dysfunctional behaviors associated with stress. For example, Ferguson (1973) studied a group of 516 telegraphers, members of an occupation characterized by monotonous, highly skilled, and repetitive tasks that demand periodic but intense concentration. The medical records of these employees revealed that the telegraphers had higher frequencies of illness and neuroticism than control workers and were also more dis-

satisfied. The most common reasons given were monotony, lack of a sense of achievement, and loss of personal contact. Performance decrements in response to monotony have also been reported by Mackworth (1950) for radar operators, and by others on compensatory tracking (Siddall & Anderson, 1955), and gauge setting (Saldanha, 1955). Thackray, Bailey, and Touchstone (1977) found that decreases in performance of air traffic controllers were significantly related to increases in self-reports of boredom and monotony, and decreases in attentiveness. Finally, a study by McBain (1970) found that the performance of long-distance drivers in a monotonous laboratory task was a good predictor of the number of both preventable and unpreventable accidents experienced later in actual driving. McBain concluded that persons who are steady, conscientious, and alert adjust to monotonous environments more easily without adversely affecting performance.

Summary. The literature that pertains to dangerous or monotonous environments has examined their effect on measures of physiology, affect, and behavior. With regard to physiology, both danger and monotony produce reliable physiological changes although the effects are better documented and perhaps stronger for danger. Danger often results in a large increase in a number of indicators of arousal such as adrenaline and noradrenaline, while it remains somewhat unclear whether monotony is associated with over- or under-arousal. Both of these stressors appear to be associated with negative affect such as anxiety, depression, and irritation associated with danger, and fatigue, boredom, and job dissatisfaction linked to monotony. When the effect of these stressors on behavior is considered, they seem generally to also have a negative effect. Danger appears to nearly always impair performance, although it should be mentioned that the levels of danger in these studies were much higher than that experienced by the typical person. Approximately the same might be said for the effects of monotony. It is interesting to note that despite the fact that danger and monotony are basically opposite environmental conditions, high levels of either typically are associated with negative personal and organizational outcomes. Nevertheless, there are persons who seem to cope quite effectively with these stressors and may even flourish once they have adapted to them. Coping and adaptation techniques will be discussed later in this chapter, but first the stressors that are related to organizational factors are considered.

### Organizational Stressors

There are numerous aspects of an organization itself that may be sources of stress. Many of these aspects have received attention recently in research on organizational culture that attempts to discover how an organization can provide a work atmosphere that is most conducive to high performance and satisfaction. When an organization is unable or unwilling to provide this atmosphere, however, stress is often the result. This stress may be the outcome of a potentially limitless number of these factors, many of which have been examined in the literature. For the present discussion, we confine the review to several that



have received more research attention. The first of these to be discussed deal with role-based stress.

Role Conflict and Ambiguity. The literature on role theory suggests two constructs describing role perceptions: role ambiguity and role conflict. Each of these may occur by reference to a role, which is a set of expectations concerning the behavior of a particular person. Role ambiguity takes place when these expectations are lacking or poorly communicated, leaving the individual unsure of how to act. The individual may also be uncertain how to behave under conditions of role conflict, but for role conflict, the uncertainty stems from having received mutually opposing expectations. In either situation, the concomitant stress may be easily visualized.

Rather than discuss the role literature by individual study, the results of a recent and comprehensive review by Fisher and Gitelson (1983) will be described. These authors identified 18 organizationally and personally dysfunctional outcomes that have been associated with role conflict and role ambiguity. They then used the technique of meta-analysis to accumulate and summarize the findings from 42 studies of role-based correlates. Meta-analysis (Hunter, Schmidt, & Jackson, 1982) is a procedure that allows estimation of the true degree of relationship between two variables, while at the same time taking into account and removing variability that is attributable to statistical artifacts (e.g., sampling error, restriction of range, unreliability of measures). In the Fisher and Gitelson (1983) review, a conservative approach was adopted in which correction was made only for that variability that could be reasonably attributed to sampling error.

The results of the Fisher and Gitelson compilation are shown for role conflict in Table 4.1 and for role ambiguity in Table 4.2. In each table, correlation and sample information is given in columns one through six. Column seven, the next to last column, shows the variance in each of the coefficient distributions that is left over after subtracting the variance attributable to sampling error. Column eight displays the results of chi-square tests of significance for each of the residual variances. Since a significant chi-square means that the remaining variance is statistically different from zero, significant results indicate that either other statistical artifacts are contributing variance to the distribution of coefficients or that the relationship is moderated (differentially related) across factors such as job level. In other words, the correlates of role conflict and role ambiguity that do not show a significant chi-square in column eight are those in which role stress affects individuals about equally regardless of other factors. The level of association between role stress and its correlates is therefore shown by the mean correlation for correlates without a significant chi-square. Those that show a significant chi-square have variability in their distribution of coefficients that is attributable either to statistical artifacts or moderators. Interestingly, follow up investigation by Fisher and Gitelson showed that job level (lower, professional, or managerial) was not an important moderator in these relationships.

Table 4.1. Meta-analyses of role conflict and 19 correlates from 42 studies.

(from Fisher & Gitelson, 1983)

Correlates of Role Conflict	1	2	3	4	5	6	7	8
	Mean Correlation	Range of Correlations	Total Sample Size	Range of Sample Sizes	Number of Samples	Variance in Sample Correlations	Unexplained Variance in Sample Correlations <sup>1</sup>	Chi-square
Propensity to leave	.29	.06 to .52	1814	49 to 506	12	.0189	.0133	39.61**
Organizational commitment	-.25	-.12 to -.41	755	55 to 203	6	.0076	.0006	6.43
Job involvement	-.15	.00 to -.21	1220	55 to 399	7	.0035	-.0020	4.22
Tension/anxiety	.28	.12 to .69	1768	61 to 488	12	.0336	.0278	92.92**
Overall job satisfaction	-.35	.13 to -.55	2343	61 to 506	13	.0266	.0222	78.30**
Satisfaction with pay	-.20	-.06 to -.33	2545	50 to 506	12	.0037	-.0006	9.97
Satisfaction with co-workers	-.31	-.11 to -.40	2538	50 to 506	12	.0045	.0006	13.72
Satisfaction with supervisor	-.37	-.28 to -.49	2104	50 to 399	12	.0034	-.0008	9.87
Satisfaction with promotion	-.26	-.14 to -.41	2541	50 to 506	12	.0093	.0052	27.74**
Satisfaction with work itself	-.31	-.07 to -.58	3991	35 to 506	26	.0132	.0079	64.58**
Performance self-rated	-.12	.12 to -.37	797	49 to 302	6	.0166	.0093	13.43**
Performance superior-rated	-.09	.08 to -.29	2376	34 to 399	16	.0159	.0093	38.77**
Boundary spanning	-.26	.08 to .36	967	51 to 714	3	.0043	.0016	4.73
Participation in decision-making	-.28	-.19 to -.30	1200	61 to 714	5	.0004	-.0031	.59
Formalization	-.06	.24 to -.40	984	88 to 252	6	.0475	.0414	48.58**
Tenure	.03	.28 to -.21	1796	81 to 714	8	.0146	.0101	26.34**
Education	.10	.26 to -.18	1932	91 to 506	7	.0074	.0038	14.18*
Age	-.05	.29 to -.27	712	31 to 252	5	.0232	.0162	16.75**
Role ambiguity	.37	.01 to .50	2521	70 to 399	14	.0170	.0129	53.57**

<sup>1</sup>Variance still unexplained after the removal of variance expected due to sample sizes.

\*p < .05

\*\*p < .01

(A list of the studies in this analysis can be found in Appendix B.)

Table 4.2. Information on role ambiguity and 18 correlates from 42 studies.

Correlates of Role Ambiguity										1	2	3	4	5	6	7	8
										Mean Correlation	Range of Correlations	Total Sample Size	Range of Sample Sizes	Number of Samples	Variance in Sample Correlations	Unexplained Variance in Sample Correlations	Chi-square
Propensity to leave										.32	-.07 to .63	1963	43 to 506	14	.0192	.0134	49.57**
Organizational commitment										-.34	-.27 to -.43	575	23 to 190	6	.0022	-.0059	1.60
Job involvement										-.26	-.12 to -.37	1354	55 to 399	8	.0068	.0017	10.33
Tension/anxiety										.19	-.07 to .78	1858	27 to 488	16	.0335	.0255	73.30**
Overall job satisfaction										-.15	.05 to -.37	2295	43 to 488	16	.0408	.0347	110.70**
Satisfaction with pay										-.12	.11 to -.56	2041	50 to 399	11	.0129	.0077	30.35**
Satisfaction with co-workers										-.22	-.07 to -.33	2540	50 to 506	12	.0029	-.0014	8.10
Satisfaction with supervisor										-.37	-.16 to -.53	2297	50 to 399	13	.0101	.0057	28.98**
Satisfaction with promotion										-.24	-.12 to -.44	2543	50 to 506	12	.0063	.0022	18.70
Satisfaction with work itself										-.35	-.07 to -.61	4589	35 to 506	31	.0158	.0106	97.38**
Performance self-rated										-.24	.18 to -.49	1035	49 to 203	7	.0277	.0217	31.83**
Performance superior-rated										-.10	.11 to -.36	2596	34 to 399	18	.0166	.0098	44.15**
Boundary spanning										-.14	-.13 to -.31	967	51 to 714	3	.0016	-.0014	1.62
Participation in decision-making										-.51	-.25 to -.60	1139	68 to 714	4	.0154	.0135	29.05**
Formalization										-.40	-.23 to -.57	984	83 to 252	6	.0180	.0137	25.76**
Tenure										-.13	-.03 to -.24	1796	81 to 714	8	.0027	-.0016	4.93
Education										.15	.04 to .18	1426	81 to 714	6	.0018	-.0022	2.62
Age										-.17	-.13 to -.29	1127	81 to 506	5	.0034	-.0008	4.19

<sup>1</sup> Variance still unexplained after the removal of variance expected due to sample sizes.

\*  $p < .05$

\*\*  $p < .01$

It can be seen from the tables that as role-based stress increases, tension, anxiety, and propensity to leave also increase. Similarly, satisfaction and organizational commitment are negatively related to role-based stress. On the other hand, neither performance nor tenure bears much of a relationship with the role variables, implying that their effect is less powerful on behavior than on affect. Finally, several additional studies of role variable correlates were located that provide further support for an association between role-based stress and dysfunctional outcomes. Role conflict has been found to be related to slower and less accurate group performance (Lidell & Slocum, 1976), less confidence in the organization (Kahn et al., 1964), fatigue (Beehr et al., 1976), somatic complaints, depression, and irritation (Caplan et al., 1975), heart rate (Caplan & Jones, 1975), and a sense of futility (Hall & Gordon, 1973). Role ambiguity has been linked with anxiety, depression, physical symptoms, a sense of futility, and low levels of self-esteem (e.g., Brief & Aldag, 1976; Greene, 1972). Also, causal modeling has been used to justify causal inferences that role variables determine such outcomes as job-related tension, job satisfaction, and one's propensity to leave an organization (Bedeian & Armenakis, 1981; Kemery, Bedeian, Mossholder, & Touliatos, 1984).

Workload. Another organizational stressor that is mentioned perhaps more than any other on the job is that of workload. Regardless of the type, location, and level of the job, there is often more distress over the amount and quality of work to be done than any other characteristics of it. Workload, like the role concept, is two-sided; it includes both underload and overload. A distinction may also be made within these categories between the quantitative and qualitative. For example, quantitative overload might occur when an employee has too much to do, while qualitative overload comes about when he/she does not have the knowledge, skills, and abilities to do the job adequately. Similarly, underload may involve too little work (quantitative) or work that is not sufficiently challenging (qualitative). As might be predicted by interactionism, this type of person-environment misfit has often resulted in stress and its related ills.

Perhaps the best evidence for the stressful effects of work underload and overload comes from investigations of psychological variables. Margolis, Kroes, and Quinn (1974), in a study of 1496 workers employed at least half-time, found underutilization (a composite of the two types of underload) and overload (also a composite) to be related to a host of stress outcomes. The results of this study are shown in Table 4.3.

Table 4.3. Product-moment correlates between underutilization, overload, and several stress-related outcomes (N=1496).

(From Margolis, Kroes, & Quinn, 1974)

Stress Indicator	Underutilization	Overload
Overall physical health	-.09*	-.02
Escapist drinking	.07*	.06*
Depressed mood	.16*	.00
Self-esteem	-.18*	.10*
Life satisfaction	-.17*	.04
Job satisfaction	-.26*	.02
Motivation to work	-.27*	.26*
Intention to leave job	.18*	-.03
Frequency of suggestions to employer	-.10*	.17*
Absenteeism	.09*	.06*

\*  $p < .05$

It can be seen that underutilization was much more highly related to dysfunctional outcomes than overload, while overload was most highly correlated with motivation to work.

The results are far from uniform, however. After noticing how frequently job incumbents mentioned issues related to work overload, Sales (1969) took three related items and found them to correlate .60 with job-related tension. Caplan and Jones (1975) found that subjective quantitative work load was positively related to reported anxiety ( $r=.38$ ) and to heart rate ( $r=.16$ ). The latter relationship, however, dropped to  $r=.05$ , when the effects of anxiety on heart rate were partialled out. Thus, the researchers concluded that the effect of perceived work load on heart rate may have occurred through the perception of anxiety. French, Tupper and Mueller (1965), in a study of 122 university professors and administrators, found, through factor analysis, that quantitative and qualitative workload were distinct variables. Furthermore, it was shown that these two variables had some similar and some disparate effects. Both were found to be related to job tension (quantitative load,  $r=.40$ ; qualitative load,  $r=.60$ ). However, their relationships with self-esteem were more unique; that is, quantitative overload was related to low self-esteem among administrators ( $r=.70$ ), but not among professors.

Abdel-Halim (1978), using data collected from a sample of 89 managerial personnel, found quantitative role overload to be related to job anxiety ( $r=.27$ ), but not to satisfaction with work ( $r=.05$ ) or job involvement ( $r=.02$ ). Moreover, when the effects of role conflict and role ambiguity were removed from the overload-anxiety relationship, the correlation was

only reduced minimally ( $r=.21$ ). In a study of 143 male and female workers involved in either drafting, mechanical, or technical/clerical jobs, Beehr, Walsh, and Taber (1976) found role overload to be significantly related to six organizationally and/or personally relevant situations, with role ambiguity ( $r=.19$ ), job dissatisfaction ( $r=.18$ ), fatigue ( $r=.32$ ), tension ( $r=.32$ ), effort toward quantity ( $r=.18$ ), and job involvement ( $r=.18$ ). On the other hand, overload was seen to be more weakly related to non-participation ( $r=.16$ ), effort toward quality ( $r=.07$ ), and a measure of need strength ( $r=.00$ ).

Two final investigations also examined the relationship between workload and psychological outcomes. In a study of over 1600 persons, aged 45-77 years, Haynes, Levine, Scotch, Feinleib, and Kennel (1978) found correlations that were not significantly different from zero for 15 different psychosocial indices. Only Type A behavior (a set of aggressive, ambitious, impatient and competitive behaviors) was found to have a significant relationship ( $r=.23$ ) with work overload. French, Caplan, and Harrison (1982) found that underload was significantly related to workload dissatisfaction, depression, and irritation, while overload was associated with job dissatisfaction, depression and irritation. In both of these studies, correlations with physiological variables such as blood pressure, heart rate, and cholesterol level were near zero, an outcome almost exactly opposite to that of Caplan (1972) who found high ( $r=.40 - .70$ ) levels of association.

Before closing this discussion of organizational stressors, one final study will be described that investigated the relationship between the activities performed on different jobs and the levels of various stresses experienced by employees in those jobs. Basically, Shaw and Riskind (1983) used the data bank of the Position Analysis Questionnaire (McCormick, Jeanneret, & Mecham, 1972) to identify the dimensions of worker behavior found in a given set of jobs. For this same set of jobs, information had been previously gathered as to the incidence of a variety of physiological, psychological, and behavioral indices of stress. Thus, Shaw and Riskind were able to compute the relationship between each job behavior dimension and the incidence of stress in jobs that included that behavioral dimension. Their results supported the idea that there are in fact certain objective activity requirements that are more highly associated with stress than are other job activities. Therefore, jobs that possess a number of these stressful activities may contribute to stress-related problems for workers in these jobs. The Shaw and Riskind study is only an initial step in gaining an understanding of how job characteristics contribute to the stress process, but it combines nicely with the research on organizational stressors. Unfortunately, there are alternative explanations for the Shaw and Riskind findings, and more evidence is clearly needed before action related to their results would be warranted.

Summary. In the popular press and everyday interaction, the four variables of role ambiguity, role conflict, work overload, and work underload are widely seen as having major stressful effects. These

effects are perceived as being so powerful that organizations today are under a degree of pressure to ensure that their employees are totally clear on what is expected of them, and that these expectations are reasonable in terms of workload. The scientific literature, however, is in much less agreement as to the effects of these stressors. With regard to role ambiguity and conflict, the evidence does show that these variables are associated with a number of negative affective states. Nevertheless, there seems to be little deleterious effect on performance and tenure, the behavioral manifestations that an organization might be most interested in. Work overload, in fact, appears to stimulate performance, reminding one of the statement that: "The only thing that motivates me is a deadline."

Other workload correlates seem to yield an inconsistent pattern in which a finding of negative affect outcomes is not unusual, but neither is mixed results. Underload, a situation that is perhaps consistent with a job such as security guard, appears to nearly always have negative outcomes, especially in affect. Overall, however, it seems premature to conclude that role and workload variables have major negative behavioral effects on employees. The physiological evidence, though spotty, fails to show any striking ill effects, and perhaps the most serious condemnation of these stressors is that people often don't like them. On the other hand, the amount of research in this area is simply not sufficient to say that there are no long-term problems associated with it. Longitudinal research would therefore be highly desirable.

#### Life Events and Stress

The stressful effects of various environmental and organizational characteristics that have been discussed represent only a part of the stress that is experienced by people over time. Much of our lives takes place outside the work context and, in addition, there are a number of events in life that are particularly significant and stressful. Because these significant events are those that define a person's life, they contribute to a more well-rounded picture of the stressors that can affect people's health, affect, and behavior. Thus, such events as marriage, financial reversal, or change in residence may result in strong and persistent effects that would not be predicted based on the present environment alone. These events are therefore important both to the total stress process and to behavioral reliability as well.

Researchers on life events focus on two classes of situations: 1) those to which everyone is exposed in the natural course of life, e.g., death of a loved one, and 2) those discrete and fairly recent events that may be unique to a particular person, e.g., personal injury. These two categories may overlap to some degree and may represent differing levels of stress to different people. There is evidence, however, that both types of these stressful events play a significant role in provoking the onset of physical illness, suicide, depressive conditions, neurotic disorders, and, to a lesser extent, schizophrenia (Isherwood, Adam, & Hornblow, 1982; Brown & Harris, 1978; Barrett, 1979; Theorell, 1974).

In addition, persons who experience the above problems have been found to be three times more likely than controls to have had a stressful life event in the weeks prior to the problem.

Assessment of life events. Quantitative procedures for measuring life events have been widely utilized in research on life stress since Holmes and Rahe introduced their Social Readjustment Rating Scale (SRRS) in 1967. The first version, known as the Schedule of Recent Events (SRE), was constructed by culling a list of events "empirically observed to cluster at the time of disease onset" from about 5,000 life charts of medical patients. The SRE contained 43 common human events representing family, personal, occupational, or financial situations (e.g., promotion, death of a spouse, change in residence, personal injury). Upon examination of the types of events reported, the authors postulated that the degree of change in one's ongoing life pattern, or the social readjustment that was associated with the event was the critical quality predictive of impairment (Holmes & Rahe, 1967, p. 217). It has also been hypothesized that the amount of social readjustment required is additive, so that a number of stressful life events might combine in order to produce undesirable outcomes (Lloyd, Alexander, Rice, & Greenfield, 1980).

Most research in this area has shown that stressful events are at least partially additive, although whether and how to assign them different weights is still a matter of controversy. If the study's focus is on events as they are experienced by a broad range of individuals, the weights obtained may be far different from those in a specific, target sample (Cleary, 1981). Also, events differ in their desirability in general and for different individuals. Ross and Mirowsky (1979) conclude that a simple count of undesirable events is more predictive of psychological distress than any other measurement technique. It also appears that the degree of undesirability of life events accounts for more variance in the prediction of health impairment than any other single dimension (Isherwood, Adam, & Hornblow, 1982). Finally, the controllability that the individual is able to exercise over these events has an effect over and above that of desirability (Suls & Mullen, 1981).

Psychological outcomes. Although the impact of life events on behavioral outcomes has also been investigated, much of the research on life events has dealt with psychological effects such as depression, anxiety or other emotional problems. As might be expected, research in each of these areas demonstrates that persons with these psychological problems have experienced more stressful events in the months prior to the onset of the disorder than have normal controls. The relative risk of depression, for example, has been shown to be increased by a factor of about six for the six months following a significant life event (Paykel, 1979). In addition, those events that are undesirable, that represent a personal loss, or that are severely threatening are particularly likely to precede a depression.



In a study by Paykel and others (1969), depressed persons reported five times as many undesirable events and exits (friends and relatives who leave the person's social field), yet experienced the same number of desirable events and entrances (to the person's social field) as did controls. Similarly, Brown, Harris, and Peto (1973) found that depressed persons had experienced a higher rate of long-term and severely threatening life events compared to controls. Perhaps the most interesting finding, however, was that the long-term and severe nature of events were far more likely to affect the depressed persons than the controls. Of the controls who had experienced long-term or severely threatening life events, only one-fifth developed depression as compared to two-thirds in the depressed group. This difference in psychological vulnerability will be discussed further later.

In contrast to depression, anxiety appears to be less frequently associated with life events. Paykel, Prusoff, and Uhlenhuth (1971) found that 31 percent of depressed persons had one or more exits in the six months prior to onset, compared to 17 percent for those with anxiety disorders; 58 percent of depressed persons had at least one undesirable event, compared to 42 percent for those with anxiety. There were also qualitative differences between the two groups in the events that were significant. Many events for the depressed persons involved changes in important interpersonal relationships such as death or divorce. In contrast, events for those with anxiety centered around work or performance such as retirement, unemployment, or financial problems.

Other psychological outcomes that have been associated with life events include schizophrenia and suicide attempts. Although there is less research on these two outcomes, work by Jacobs, Prusoff, and Paykel (1974) and Paykel, Prusoff, and Myers (1975) suggests that suicide attempts are even more highly associated with life events than depression or anxiety, while schizophrenia is less associated with life events. The pattern of events is also different for suicide attempters, since events appear to peak sharply before the suicide attempt. With other forms of psychological disorders, the pattern of events is flatter and shows a milder peaking before onset.

Behavioral outcomes. Although some of the psychological outcomes discussed previously also involve behavior, the research described in this section focuses principally on the tendency for people to be involved in accidents. Basically, the research shows that those persons who have experienced stressful life events are more likely than controls to be injured, either on or off the job. Levenson, Hirschfield, and Hirschfield (1980) empirically demonstrated that workers who sustained low back injuries on the job and who did not recover with traditional medical treatment had continually increasing numbers of undesirable life events prior to their accidents. These blue-collar workers experienced 25 percent more life events than people in the general population. In addition, prior to their accidents, the workers exhibited appetite, sleeping, and sexual disturbances. Vinokur and Selzer (1975) found that the best predictor of alcoholics' traffic accidents is the number of

undesirable life changes the drivers experienced prior to their accidents. Also, Isherwood, Adam, and Hornblow (1982) found that drivers involved in auto accidents were significantly different from controls on 13 methods of life event scoring.

A study by Levenson, Hirschfield, Hirschfield, and Dzubay (1983) indirectly examines the effect of life events on industrial accidents. The study focused on the effects of life changes on industrially injured male and female workers before and after their accidents. All had sustained injuries that were treated unsuccessfully by traditional medical treatment. Life events were obtained by interview for the four-year period prior to and the one-and-one-half-year period following the accident. Both sexes reported a high level of life change, which for the women was ongoing throughout the four years prior to the accident and for the men increased in the year or two prior to the accident. The primary source of these life events was the home (e.g., marital or financial), although work-related items such as change in hours or trouble with coworkers were also frequently mentioned. The greatest number of life events overall were reported in the year following the accident, indicating that the post-accident recovery process involved a number of associated life changes.

Vulnerability. As mentioned earlier, there are often wide disparities between people in the way in which they react to significant life events. Some persons appear to be especially vulnerable to stress-related outcomes precipitated by events. This topic will be covered in more detail in the next section on coping with stress, but is mentioned here in order to show its relationship with life events. Two primary categories have been investigated in this area as affecting an individual's vulnerability to life events stress: social support and personal hardiness. Social support is hypothesized to reduce stress by providing empathy for the individual, while those high in hardiness are simply more resistant to life events stress.

The importance of social support has been documented by authors such as Eaton (1978), Gore (1981), and Cobb (1976) who each found that support reduced pathology in response to stressful events. For example, the relationship between life events and psychiatric symptomatology was stronger among two relatively unsupported groups, the non-married and those living alone, than among those married or living with others. This finding held both for persons who were unemployed and for pregnant women (Nuckolls, Cassel, & Kaplan, 1972). Other researchers have shown that social support may also exert independent effects rather than the moderating effect mentioned above (Andrews, 1978; Lin, Ensel, Simeone, & Kuo, 1979). Thus, social support may improve emotional adjustment independently of stressful life events.

Personal dispositions such as the construct of "hardiness" have also been shown to affect vulnerability to life events stress. Hardiness is quite similar to the construct of "locus of control," and involves the personality characteristics of commitment and need for challenge as well

as control. A study by Kobasa, Maddi, and Kahn (1982) showed that, not only does their measure of hardiness correlate in the predicted manner with other measures of commitment, challenge, and control, but that hardiness is also an effective moderator of the relationship between stressful life events and illness. This conclusion has also been supported by Johnson and Sarason (1978).

Summary. There are a number of problems with the literature on life events and stress. First among these is the familiar problem with defining and measuring the variables, such as the significance, desirability, and weight to be assigned to differing events. Also a problem is the fact that most studies show only a relative relationship between life events and stress rather than an absolute level prediction. In other words, the research shows that life events make a person more vulnerable to stress than controls, but there is little information about exactly what level of stress will be predicted for any given life event. Again, progress in this area is limited by a lack of knowledge about stress in general.

What is known about life events and stress is that these events do seem to have a powerful impact on various stress-related outcomes such as depression, anxiety, and suicide attempts. Life events have also been shown to be related to accidents both on and off the job. There is some research that indicates that social support can reduce life events stress, and that personal hardiness can also affect an individual's stress vulnerability. In general, however, this area of research must still be considered to be in its infancy, and requiring both more rigorous and more numerous investigations.

#### Coping With Stress

The literature that has been discussed so far in this chapter has not presented a very clear picture of the effects of various stressors upon either performance in general or the reliability of performance. It has been well documented that stress often has an impact on physiological, behavioral, and affective indices, but the effects have sometimes been negative, sometimes positive, and often of greatly varying size. Yet for this very reason, stress may be seen as a variable that uniquely illustrates the interactionism that has been the unifying thread of this report. Behavior is the result of the interaction of a number of environmental and personal forces, and stress is a more specific example of that process. In other words, the discrepant effects of the stressors discussed previously are less at odds with each other when one considers that there are many individual differences in the way people deal (cope) with stress. Thus, "coping" is an extremely important part in gaining an understanding of how stress affects behavior. Also, coping is a key concept in appreciating the way that complex interactions result in behavior.

Before beginning a more technical consideration of the role of coping and its effect on stress and behavior, an example is presented to illustrate how coping behaviors might function. Suppose that a security

person has for several months been assigned to guard an area that is considered both important and vulnerable to theft or sabotage. Assume further that, despite the grave consequences of such theft or sabotage, there have been no such incidents for as long as anyone can remember. In this situation, the security guard could potentially be experiencing stress as a result of monotony, danger, work underload, and role conflict, as well as heat or cold if he/she is working outdoors. The degree of stress experienced, however, is likely to be different for different individuals, at least in part because individuals differ in how they perceive and cope with potential stress. Thus, the security guard might be apathetic and listless, suffer from headaches and hypertension, or drink alcohol on the job. Conversely, the guard might instead see the job as challenging and important, and perform it in a thorough and enthusiastic fashion. These differences in reaction to stress are often attributed to different strategies and levels of effectiveness in coping, and are discussed below in more detail.

#### Theoretical Approaches to Coping

There is wide agreement among researchers that the primary purpose of coping activities is to reduce, manage, tolerate, or minimize perceived stress. Researchers also agree that, despite differences in emphasis on specific personal and situational factors, both of these kinds of variables have impact (in interaction) on the choice and implementation of coping strategies. Finally, with regard to research issues, investigators of coping again show similarity by addressing three central questions: (1) what is the appropriate domain of coping activities? (2) how do these activities influence the relationships among objective conditions, perceived stress and physical, social and psychological outcomes? and (3) how do personal and situational variables influence the selection and implementation of coping activities?

Researchers of coping differ amongst each other in the way in which the coping construct is defined and the range of activities that are included within the construct. To a large extent, these differences depend both on the researcher's theoretical conceptualization of stress and the target population under investigation. Three major theoretical approaches have dominated the literature on coping: psychodynamic, person-environment/relational, and individual difference views. While these approaches have overlap and are particularly similar with regard to the assumptions and research issues mentioned in the previous paragraph, they typically differ from each other in operational definitions of coping and in methodology as well. Therefore, in the following discussion of coping with stress, each of the three major theoretical approaches is considered separately. Differences among the approaches are thereby highlighted and comparisons of findings across approaches can be made. Unfortunately, because of the differences in approach, these comparisons are often limited to fairly general terms.

Psychodynamic approaches. The principal assumption made in psychodynamic approaches to coping is that stress, or anxiety, is primarily

the result of intrapsychic conflict. This intrapsychic conflict centers on the person's needs, motives, impulses, or beliefs, and occurs when two or more of these are mutually incompatible (cf. Folkman, 1984). The anxiety associated with such conflicts, whether conscious or unconscious, then serves to motivate the activation of emotion-focused, defensive coping processes. The coping processes are viewed as defense activities because of their role in reducing or avoiding an aversive or anticipated harmful state. Thus, these coping activities are composed of often unconscious, defensive processes such as denial, repression, projection, and intellectualization. Further, the use of particular defense mechanisms is often thought to depend on both early life experiences and the degree of threat or anxiety involved. Several writers (Haan, 1977; Menninger, 1954) suggest that defenses can be arranged on a continuum of implied threat. Lower order, more regressive forms of defense such as denial are posited to predominate under conditions of severe anxiety; more adaptive and reality-based defenses such as suppression are most likely under milder anxiety conditions. Lastly, a person's ego resources, developed in prior life experiences, also serve to influence the use of different coping mechanisms.

Empirical evidence on the use of defensive coping in a stress context is difficult to evaluate due to the differing indices of defensive coping activities and different stress contexts employed across studies. Findings of several studies suggest that defense mechanisms facilitate adaptive functioning. For example, Houston and Hodges (1970) investigated performance on a digit-span task under high situational stress conditions. The findings obtained indicated that individuals who engaged in active denial of stress (stress as indexed by physiological measures) performed better than persons who did not use defensive forms of coping. Houston and Hodges point out, however, that although individuals who used denial coping may have performed better on the immediate task, the use of defense mechanisms can be maladaptive in long-term performance. This might occur, for example, if an individual were to repeatedly deny the existence of an objective problem. Lazarus (1966) further emphasizes this point, noting that defense mechanisms result in a reduction or elimination of perceived stress via their effects on the individual's interpretation of the situation; the objective situation remains unchanged.

Defensive responses that distort reality but do not change the objective situation are not equally well-suited for all contexts. If the defensive coping helps a person to control his/her emotions so that they can deal with the situation, it has a beneficial effect. Coping might have a negative effect, however, if it were to encourage the person to ignore the situation indefinitely rather than face it. As Lazarus (1966) states, "Defense is only adaptive when it allows the individual to be more comfortable while not being seriously disturbed in other ongoing activities," (p. 289).

A relatively large number of field and laboratory studies have been conducted that pertain to the issue of differences in coping activities under varying degrees of threat or anxiety (Fenz, 1962; Goldstein, 1973;

Janis & Feshbach, 1953; Mechanic, 1962). Degree of threat refers to the amount, imminence and likelihood of harm (Lazarus, 1966, p.43). In many of the investigations, researchers have examined the individual's coping activities in response to a specific, salient, threatening or dangerous condition. Janis and Feshbach (1953) investigated the effects of three different degrees of threat on subsequent dental-hygiene practices among high school students. Degree of threat was manipulated by the presentation of persuasive communications stressing high, moderate or no potentially harmful consequences for not conforming to recommended hygiene practices. The results suggested that students in the high threat condition were more likely to demonstrate an "avoidance" tendency than were students in the moderate and no fear appeal conditions. Similarly, Fenz and his colleagues (Epstein & Fenz, 1965; Fenz & Epstein, 1962, 1968; Fenz & Jones, 1972) conducted a series of studies investigating subjective changes in response to stimuli associated with sport and military parachuting. In one study, Fenz and Epstein (1962) asked novice parachute jumpers to develop stories for Thematic Apperception Cards that varied in their degree of relevance to an impending jump. They found that defensive denial occurred most frequently in response to the cards most closely associated with upcoming parachute jumps.

Other studies of coping activities in response to high threat conditions provide evidence to suggest that personal and situational characteristics may mediate the relationship between high threat and defensive coping. Anderson (1977) investigated coping behaviors and economic performance of ninety businessmen over a two-and-a-half year interval following a major flooding disaster. Among the results obtained, Anderson found that performance was curvilinearly related to perceived stress. In addition, Anderson found that locus of control was significantly associated with both perceived stress and subsequent coping activity. Persons classified as internals, who are characterized by the belief that outcomes are contingent on their behavior, were found to perceive less stress and engage in fewer emotion-focused activities than externals, those persons who believe that outcomes are due not to their own behavior but rather a result of luck, fate, chance, or the control of powerful others. The Anderson study does not provide information on specific defense coping activities in relation to degree of perceived stress but the findings do suggest that stable individual differences may influence the relationship between threat and defensive coping. Further, while performance did decrease under higher levels of perceived stress, the study does not provide any information regarding the potential relationship between a decrement in performance and dysfunctional or inadequate defensive coping.

Summary. Psychodynamic investigations of coping are based on the assumption that coping activities are defense-oriented processes designed to reduce or minimize emotional tensions associated with intrapsychic conflicts. The degree of threat or anxiety from this intrapsychic conflict is thought to influence the choice and use of particular coping mechanisms. Yet it is also clear that defensive, emotion-focused, coping activities associated with the psychodynamic approach

will provide only a partial accounting of the coping domain. Defensive coping activities that reduce emotional distress do not directly alter the objective situation; in cases of prolonged or severe stress, such defense mechanisms are often insufficient for ameliorating the threat. In these instances, individuals may engage in cognitive and behavioral coping activities designed to alter the objective conditions associated with the threat, activities outside the psychodynamic domain. Therefore, a comprehensive account of the coping domain will most likely need to include both problem-focused as well as emotion-focused coping processes.

In addition, psychodynamic theories of defense mechanisms are primarily loose and descriptive (cf. Lazarus, 1966). Defense or coping activities are not well classified with respect to which mechanisms might be predicted for use under varying conditions of anxiety or threat. Similarly, different defensive activities are not ordered in terms of their adaptive value, making interpretation of findings difficult across studies in which different defensive mechanisms were measured. Perhaps more importantly, degree of threat has not been standardized across studies independently of the responses made to the perceived threat. Therefore, integration of the evidence is not possible regarding the degree of the relationship between threat and defensive coping. Moreover, studies derived from this approach have generally failed to examine differences in the objective conditions that facilitate emotional stress, as well as the subsequent outcomes associated with particular coping mechanisms. In light of all of these concerns, further clarification of the linkages in the psychodynamic approach is essential. Such clarification is necessary before practitioners concerned with assessment and prediction of individual adaptation to stressful environments might make use of this theoretical approach.

Person-Environment (P-E) Relational Approaches. Unlike psychodynamic models, the person-environment (P-E) or relational approaches assume that coping activities are motivated by the individual's appraisal of the relationship between him or herself (the person) and the environment. Stress is defined in terms of the individual's appraisals of this relationship. P-E relations that are appraised by the individual as taxing or exceeding his/her resources and as endangering his/her well-being are defined as stressful (Folkman, 1984), while those appraised otherwise are not. Two major relational models of stress and coping have been developed: the P-E fit model which was discussed earlier in this chapter (French, Rodgers, & Cobb, 1974; Van Harrison, 1978) and the transactional model (Lazarus, 1966; 1980). In both models, coping activities refer to the cognitive and behavioral strategies by which persons attempt to manage perceived stressful relations. The details of each model in terms of coping and associated empirical research are discussed below.

The Person-Environment (P-E) Fit Model. According to the seminal work with the P-E model by French, Rodgers, and Cobb (1974), coping activities

are motivated by the individual's perception of deprivation that results from a "misfit" of personal motives (e.g., need for social affiliation) with environmental supplies (e.g., opportunity for team work) and personal abilities with environmental demands (e.g., role requirements). French et al. (1974) identify three types of coping techniques that can be distinguished in terms of their target for change. These three are environmental mastery, adaptation, and defense activities. Environmental mastery refers to those activities designed to change the objective environment by altering the quantity of environmental supplies or demands that pertain to the individual. The second form of coping, adaptation, refers to activities in which the individual attempts to alter his/her objective skills and abilities in the direction of perceived environmental demands. Defense activities, a third form of coping, are defined as the cognitive activities by which individuals may alter or distort perceptions of the objective environment or objective self. It is noted that this last form of coping is similar to the psychodynamic coping mechanisms described earlier, since these activities may be unconscious and are used to reduce subjective perceptions of P-E misfit rather than to attempt changes in the objective situation.

Investigations of the P-E fit model have focused primarily on the relationship between objective work conditions, perceived stress and stress-related work and health outcomes in relatively unchanging P-E relationships (see previous sections on environmental stressors). Very little attention, however, was paid to the mediating influence of coping activities per se on each of these linkages. As Folkman (1982) suggests, the P-E fit model may be most useful for investigation of specific job environments characterized by monotony, boredom and few options for coping. Therefore, the feasibility of P-E models in these settings will be discussed in more detail later in the section on situational variables. Also, since such P-E models have somewhat limited generalizability, we turn to transactional models of coping.

Transactional models. The transactional model of coping and stress that was recently developed by Lazarus and his colleagues (Folkman & Lazarus, 1980; Lazarus, 1981) stimulated a number of research investigations into the domain and influence of coping activities. Similar to the P-E fit model, the transactional model places strong emphasis on the relational quality of stress appraisals. In addition, the model assumes a process-orientation in which person-environment relationships are characterized as dynamic and reciprocally related. Cognitive appraisals of the person-environment relation are distinguished in terms of primary and secondary appraisal processes. Of these, primary appraisals refer to the individual's initial evaluation of P-E transactions in terms of their significance, while secondary appraisals evaluate coping resources and options.

Stressful appraisals at the primary stage are further distinguished in terms of their orientation: harm/loss, threat, or challenge. Harm/loss appraisals refer to damage to well-being already done. Threat appraisals refer to transactions that signify a potential for harm or loss.



Challenge appraisals refer to transactions that provide an opportunity for growth, mastery or gain. Each type of appraisal is characterized by a complex set of emotional responses posited to be associated with the selection and use of various coping strategies. Thus, consistent with the relational (or P-E) approach, coping is defined as the "process of managing external and/or internal demands that tax or exceed the resources of the individual," (Lazarus, 1981).

Folkman (1982) further identifies two major functions of coping: problem-focused and emotion-focused. Problem-focused efforts represent attempts to manage or alter the sources of stress; emotion-focused activities apply to the regulation of emotional responses. Folkman points out that both types of coping activities may include cognitive or behavioral strategies, and may be elicited in response to either primary appraisals that signal harm, threat, or challenge, or to secondary appraisals that evaluate coping resources and options. Also, both problem-focused and emotion-focused coping activities may either impede or facilitate subsequent coping efforts. For example, the use of emotion-focused activities in response to primary appraisals of threat may facilitate subsequent problem-focused activities. This might occur by reducing the disruptive influence of anxiety and thereby allowing the individual to identify problem-focused activities that would target effective management of stress.

Several studies provide evidence that is relevant to the relational conceptualization of the coping domain. Mechanic (1962), in a non-experimental investigation of graduate student reactions and behaviors prior to, during, and following preliminary examinations, found that students made use of a wide range of both emotion- and problem-focused coping activities across time. Pearlin and Schooler (1978) analyzed interview data obtained from 2300 persons and found three major types of coping: (1) responses that change the situation, (2) responses that control the meaning of the experience after it occurred but prior to demonstration of stress, and (3) responses that control stress after it emerges. The results indicated differential patterns of coping activities for each role context, i.e., results were different for work, marriage, etc. Also, those coping activities that redefined the meaning of the experience by alteration of goals or values (e.g., devaluation of extrinsic rewards, reward substitutions) were most strongly associated with reductions in reported stress. Pearlin and Schooler suggest that in the absence of opportunities to change the situation, the individual's psychological resources such as self-esteem and perceptions of competency will be the most important determinants of stress management. They add, however, that coping interventions are least effective in the work context.

A study by Folkman and Lazarus (1980), found somewhat different results from those of Pearlin and Schooler (1978). After collecting interview and questionnaire data about stressful events, the information was classified by situational context (i.e., work, family, health, etc.) and whether problem-focused or emotion-focused. In contrast to Pearlin and Schooler's (1978) findings about work, Folkman and Lazarus found higher frequencies of problem-focused coping in the work domain as compared to family- or health-related domains. In addition, Folkman and Lazarus

found that sixty percent of the work events reported were interpersonal and that thirty-two percent of all work events were judged to be modifiable. In almost all cases, both problem- and emotion-focused coping efforts were used. Thus, Pearlin and Schooler found that coping was in general not effective in the workplace while Folkman and Lazarus found it was. Folkman and Lazarus suggest that different methodologies for eliciting information may account for the discrepant results. They argue that Pearlin and Schooler only elicited information about enduring problems and failed to sample the domain of episodes that had been resolved. The two studies agree, however, that emotion-focused coping did increase in situations the individual appraised as not amenable to change.

In a field study investigating cognitive appraisal and coping among nursing students, Parkes (1984) applied exploratory factor analytic techniques to "Ways of Coping" (Folkman & Lazarus, 1980) questionnaire data collected over a one-year period. Results obtained revealed an optimum three-factor solution. What was particularly interesting in the findings was that coping activities may not be best represented by distinctions between problem-focused and emotion-focused coping. The three factors obtained by Parkes pertained to the tendency to use coping, and to more specific coping activities. In addition, the findings showed that emotion- and problem-focused activities are often significantly intercorrelated and both are used in almost all coping transactions. Parkes suggests that the empirical solution she obtained may be more useful for future investigations in which different types of coping strategies may be used simultaneously or sequentially over time.

Recently, Folkman (1984) has extended the transactional theoretical formulation of stress to consider the role of personal control in the choice and implementation of coping activities. She provides a preliminary but detailed theoretically-based analysis of how perceptions of personal control might influence coping activity. A full review of this conceptualization falls beyond the scope of the present paper, however specific sections of this analysis for which indirect empirical evidence is available are presented more fully in the following section on Individual Differences. In essence, Folkman suggests that stable individual differences in perceptions of control can have an important effect on primary appraisals and alter the extent to which a transaction is evaluated as threatening. Perceptions of control may also affect secondary appraisals of control through their influence on the individual's evaluation of coping options. As mentioned, the topic of personal control and its effect on coping will be discussed in more detail in the next section. It is mentioned here in order to show its relevance to the transactional approach and illustrate the overlap between theoretical approaches.

Summary. The P-E relational approach extends the domain of coping activities to cognitive and behavioral strategies that focus on alteration of the stressful transaction. In contrast to psychodynamic approaches, relational views emphasize the individual's appraisal of his/her resources and motives in relation to environmental supplies and demands.

The P-E fit model developed by French and his colleagues provides a useful framework for the investigation of coping activities in P-E contexts that are characterized by structural inflexibility. Conversely, the transactional approach developed by Lazarus and Folkman provides a conceptual framework for investigation of coping activities in complex, dynamic contexts.

Unfortunately, relatively little direct empirical research on coping activities within these frameworks has been conducted to date. One important reason for this state of affairs appears to be related to the difficulties involved in the measurement of coping. Coping activities are frequently measured via retrospective self-reports made in response to structured interviews and questionnaires. These interviews and questionnaires, however, may be inadequate to identify the full domain of coping activities. Many factors must be considered including the target of coping activity, the situational context of the perceived stress, the length of time over which the activity took place, the frequency and duration of the stressful episode, and the extent to which the situational context is amenable to change.

A distinction has been made between coping activities that are problem-focused versus those that are emotion-focused. Often coping includes both of these strategies, and it has been suggested that other ways of thinking about coping might be more productive. Also, coping strategies may differ as a function of the situation, such as work versus family or controlled versus uncontrollable. Yet it is also true that while all of the above variables help to define coping activities, they do not necessarily determine adaptational outcomes. These outcomes, or the efficiency of coping activities, are also multifaceted and are interpreted largely through the interests of the investigator. Thus, patterns of coping may reduce the individual's perceptions of "misfit" or subjective stress appraisals with no apparent effect on organizationally-relevant outcomes. Conversely, coping efforts may involve cognitive and behavioral activities that substantially influence organizationally-relevant outcomes. Therefore, to the extent that personally- and organizationally-relevant adaptational outcomes overlap, particular patterns of coping activity may be identifiable as positively associated with these outcomes.

Individual Differences Approaches. Individual differences have long been recognized as important determinants of perceptions of stress and coping activities. Demographic and background variables such as age, sex, education and previous experience have been studied as mediators of the stress-outcome relation. Psychological traits, which were discussed in Chapter II on "The Person", also have been posited to moderate linkages between objective conditions, stress appraisals, coping activities and performance outcomes. In addition, several writers (Lazarus, 1966; Locke, 1976) suggest that individual differences in situation-specific needs, work values and career goals may affect the extent to which stressful appraisals are made and coping activities enacted. Unlike trait characteristics, however, individual differences in values, goals,

and needs are more difficult to investigate since these variables frequently tend to be multidimensional, dynamic, and situation-specific. The following section reviews the literature on coping derived from an individual differences framework.

Very few investigations have been conducted on the effects of background and demographic variables on coping activities per se. In their longitudinal study across various aspects of life, Pearlin and Schooler examined the use of coping activities as a function of sex, age, education and income. They report a fairly consistent pattern of sex differences across situational domains and interpret the correlational results to imply that men, as compared to women, are more likely to use coping activities that inhibit stressful outcomes (e.g., optimistic actions). Significant findings were also obtained for age, education, and income differences, although the relationships were much stronger in the marital and parental areas of life than in the occupational context. Thus, older, better educated, and more affluent persons were found to utilize more optimistic coping strategies as compared to younger, less educated, and poorer persons, especially in the marital and parental areas of life.

Personal Control. As mentioned earlier, the construct labeled "locus of control" has been investigated in relation to a number of topics including coping with varying degrees of threat. Locus of control refers to an individual's enduring, cross-situational beliefs about control over outcomes of importance. As formulated by Rotter (1966, 1975), individuals may be classified into one of two categories on this trait: internals or externals. Individuals with an internal locus of control are characterized as maintaining the generalized belief that events are contingent upon their behavior. Conversely, those with an external locus of control attribute responsibility for events or outcomes as noncontingent upon their own behavior (i.e., due to luck, chance, fate, or control by powerful others).

Rotter's (1966) Internal-External Scale, consisting of twenty-nine self-report items presented in a forced-choice format, is frequently used to measure an individual's locus of control orientation. Research on the locus of control construct indicates that, in contrast to externals, internals are more likely to attribute job events to their own actions (Hammer & Vardi, 1981), to perceive more alternatives in a choice situation (Harvey, Barnes, Sperry, & Harris, 1974), to exert greater efforts to control their environments (Julian & Katz, 1968), exhibit less conformity (Crowne & Liverant, 1963), and make better use of information in complex problem-solving tasks (Wolk & DuCette, 1974). Locus of control has also been found to be negatively related to anxiety; persons with an internal orientation tend to be less anxious than externals (Archer, 1979).

A number of correlational, cross-sectional studies have been conducted to investigate the moderating function of locus of control in the

perceived relationship between job characteristics and stress. Unfortunately, the studies provide inconclusive results in the work domain (see Spector, 1982, for a review). Fairly conclusive results are available, however, in several studies investigating the effects of life stress on illness symptomology (Denney & Frisch, 1981; Kobasa, Maddi, & Kahn, 1982; and Lefcourt, Miller, Ware, & Sherk, 1981). Basically, these studies indicate that internals experience less distress than externals and demonstrate less mental and physical impairment in response to life-stress episodes. In short, internals seem to cope with stress better than externals with regard to illness, but there is little evidence of this tendency within the work setting. Several studies provide insight into why this paradox might exist.

In the study by Anderson (1977) that was described earlier on managerial adjustment following flood damage, internals were shown to use a greater number of task-centered and problem-solving coping behaviors. Internals also used fewer emotion-centered coping activities than did externals. Most significantly, the problem-focused coping activities of internals were significantly associated with improved performance. Thus, it may be that locus of control does moderate the relationship between job characteristics and stress, but does so primarily through association of particular types of coping with both internals and externals. Support for this hypothesis is also available from Tanck and Robbins (1979) who found evidence linking locus of control to coping strategies used in management of daily problems. Further support for the link between locus of control, coping activities and long-term adaptation has been reported by Bracken and Bernstein (1980), Bulman and Wartman (1977) and Shadish, Hickman and Arrick (1981) for persons exposed to severe accident victims.

Parkes (1984) also investigated the effect of locus of control on cognitive appraisals and coping activities, using first-year nursing students as subjects. The students were asked to recall stressful episodes, occurring primarily in the work context, for a one-year period. The pattern of results obtained indicated that internals, as compared to externals, reported fewer general coping strategies in clear-cut situational contexts (i.e., conditions that were clearly either modifiable or unmodifiable). The internals reported a larger number of general strategies, however, in situations perceived as uncertain with respect to amenability to change. Thus, the internals might be considered to be more sophisticated in their coping activities, relative to externals. When a situation is clearly modifiable or unmodifiable, the internals had fewer coping strategies because the appropriate activities are more obvious. Similarly, when a situation is ambiguous, internals had a larger number of strategies because fine distinctions may have to be made. In addition, the findings reported by Parkes, as well as those of Pearlín and Schooler (1978), showed that internals engaged in more problem-focused coping activities and fewer emotion-focused activities in those situations that were appraised as amenable to change.

Locus of control represents but one conceptualization of the broader construct of personal control. As reviewed above, the bulk of evidence

bearing on the relationship between locus of control, and stress and coping suggests that increased perceptions of control over aversive or threatening contexts facilitate the use of problem-focused coping activities and better adaptational outcomes. Several theorists and researchers (Averill, 1973; Folkman, 1984), however, have suggested that increased perceptions of personal control may not always be beneficial. Following a review of the experimental research literature on the relationship between personal control and stress. Averill (1973) concluded that three types of personal control may be distinguished: (1) behavioral control (direct action on the environment), (2) cognitive control over the interpretation of events, and (3) decisional control (opportunity for choice among alternative courses of action). Averill suggests that it is the meaning of the control, rather than the type or presence of such control, that is most importantly associated with both coping activities and adaptational outcomes. In other words, individuals may exercise control over a stressful situation in ways that differ in meaning, such as reacting aggressively versus suppressing the stress. Although control is exercised in both cases, the meaning of the control for that situation is what determines whether this particular coping strategy (or some other) is adaptive.

Another individual difference construct relevant to stress and coping is anxiety, which may be conceptualized as either a state or a trait. Trait anxiety has been demonstrated by the existence of stable individual differences in susceptibility to anxiety when exposed to stressful situations (Eysenk, 1979; Spielberger, 1972). By contrast, state anxiety is defined as subjective, consciously perceived feelings of tension and apprehension, and heightened autonomic nervous system activity, often for relatively short periods (Eysenck, 1983, p. 274). In the basic state-trait conceptualization, trait anxiety is assumed to exert only an indirect influence on stress and coping via its effects on state anxiety. State anxiety is thus determined by interactions between trait anxiety and person-environment transactions. The bulk of research in this approach treats state anxiety as the dependent variable to be examined in relation to its two major determinants, trait anxiety and situational stressors.

Consistent with predictions developed from a state-trait approach, individual differences in trait anxiety do not appear to influence state anxiety in non-stressful situational contexts (see Shedletsky & Endler, 1974, for a review). In stressful contexts, however, these individual differences in trait anxiety are associated with state anxiety, although differently depending on whether the context involves psychological stressors (e.g., threat to self-esteem) or physical stressors and dangers (Hodges, 1968; Lamb, 1976). In contexts involving ego threat or psychologically-oriented stressors, high trait anxiety persons demonstrate higher state anxiety than do persons low in trait anxiety. In contexts involving physical danger, both high and low trait persons demonstrate high state anxiety (Morris & Liebert, 1973). Therefore, the results obtained by anxiety state-trait researchers imply that persons high in trait anxiety who encounter psychological stress events are more likely

to engage in worry-oriented coping activities than persons low in trait anxiety.

Another individual difference characteristic that has received increasing attention among stress researchers has been the Type A/B behavior pattern. As McMichael (1978) notes, "Type A does not describe a static personality trait, nor is it a stress reaction; rather it is a style of behavior with which some persons habitually respond to circumstances that arouse them," (p. 134). In contrast to Type B individuals, Type A individuals are typically characterized by a constellation of behavioral predispositions including perfectionistic tendencies, competitiveness, high needs for achievement, impatience, time urgency and an inability to relax. In a review of the research on Type A, Jenkins (1971) concluded that Type A/B patterns demonstrate cross-situational consistency and can be reliably rated. Type A behavior has also been repeatedly associated with increased coronary heart disease (cf. Price, 1984).

Results of two studies (Burke & Deszca, 1982; Caplan, Cobb, French, Harrison, & Pinneau, 1975) suggest that Type A/B exerts an influence on the individual's selection of his/her job environment. Caplan et al. (1975) investigated individual behaviors in twenty-three job groups and found systematic differences in the demonstration of Type A patterns among job groups. In a correlational study of Type A/B and preferred organizational climates, Burke and Deszca found that, among undergraduate students who would be seeking employment the following year, Type A individuals reported greater attraction to work environments that were compatible with Type A beliefs and behaviors (e.g., competitive). Burke and Deszca conclude that Type A influences both the selection of organizational settings and the modification of jobs once attained. Also, support for the notion that Type A persons perceive more job stress was obtained in a study of US NASA professionals by Caplan (1971) in which he found that Type A persons are more prone to perceive stress in potentially stressful contexts. Unfortunately, however, these studies do not examine how Type A and B individuals may differ in their intermediate coping responses to stress appraisals.

Another group of studies have looked at individual differences in coping style as well as situational factors that affect the coping process. Goldstein (1973) identified three coping styles - avoiders, sensitizers, and non-specific defenders - and found that subjects from each group differed from the others in their physiological and behavioral reactions to laboratory-induced stressors. Non-specific defenders were found to be more variable in their responses as compared to avoiders and sensitizers. Also, avoiders appeared to handle stress by progressively disengaging from the stressful situation, while nonspecific defenders were found to become more engaged. Two field investigations by Andrew (1970) and DeLong (1971), using a similar coping style classification scheme, were conducted to investigate individual differences in coping in the context of impending surgery. The results obtained in both studies are consistent with Goldstein's findings that avoiders and sensitizers were more affected by situational factors than were non-specific defenders.

In addition, DeLong found that information about the impending surgery was most helpful in reducing stress when the form and content of the information was congruent with the individual's coping style; i.e., general information for avoiders and specific information for sensitizers.

Bramel (1962), in a laboratory study of the effects of situational factors on the relationship between threat and defensive coping, showed the importance of the individual's alternatives. He concluded that choice of a defensive coping process is based, in part, on the individual's appraisal of the viability of alternatives. Thus, if denial was not a plausible coping strategy, a person might use projection or intellectualization. Similar conclusions regarding the influence of social situational factors on choice of defensive activity were reached by Hackett and Weisman (1964) following a study of terminal cancer patients.

Individual differences have also been examined in terms of their influence on coping and adjustment in a variety of specific stressful environments (Cooper & Green, 1976; Ford & Spaulding, 1973; Lachar, Sparks, Larsen, & Bisbee, 1974). Lachar, Sparks, Larsen, and Bisbee (1974) investigated the utility of personality self-report inventories in prediction of short-term emotional adjustment among new air force recruits. Self-report inventories tailored to the situational context were found to be better predictors of adjustment than general purpose inventories. Scale item analysis suggested that previous adjustment to high school authority figures and societal limits, previous social and emotional adjustment and present motivation for success in the position are importantly related to emotional adaptation and positive adaptational outcomes in military basic training. Lachar et al. (1974) suggest that such scales could be used as the first stage in a successive-hurdles approach for the identification of applicants who are most likely to fail to cope or adapt.

Cooper and Green (1976) investigated the effects of demographic variables and personality characteristics, as indexed by the 16PF, on task performance, supervisory skill and personal qualities among 64 Royal Air Force personnel stationed at two isolated island bases. The results obtained indicated an association between Factor F (sober vs. enthusiastic) and work performance on the task and supervisory dimensions. Cooper and Green interpreted their findings to indicate that enthusiastic personality characteristics may play a key role in adjustment and work performance in isolated work environments.

Finally, Ford and Spaulding (1973) investigated the effects of imprisonment on subsequent coping among crew members of the USS Pueblo. Eighty-two crew members were psychiatrically evaluated immediately following release from captivity in North Korea. Demographic and personality data were obtained and individuals were classified into one of two groups based on psychiatric evidence of the individual's adaptational coping. Results obtained indicated few significant differences between the successful and unsuccessful coping groups on demographic variables. A number of different strategies, however, were found to distinguish



adaptive coping; group members who adapted more successfully were characterized as using more problem-focused coping approaches (e.g., sizing up the situation, deciding how to handle the stress).

Summary. Although a variety of individual differences have been investigated in relation to stress and coping, the use of different operationalizations of stress and coping precludes direct comparisons across studies. In general, locus of control and trait anxiety represent two personal traits that have been theoretically and empirically linked to the prediction of stress and coping activities. Background and demographic variables have also been associated with both coping activities (Pearlin & Schooler, 1978) and adaptation outcomes following longer-term specific stressful encounters (Cooper & Green, 1976; Lachar et al., 1974). As Lachar et al. (1974) suggest, these findings may be most useful in the early identification and screening of applicants for high-risk stress-related job positions. Type A/B research, which has great potential relevance in this area, has focused primarily on the physical health consequences of Type A behaviors. However, recent research by Caplan (1971) and Burke and Deszca (1982) does suggest that individuals may self-select jobs on the basis of perceived person-environment fit. Thus, type A individuals were found to prefer organizational settings consistent with their behavioral predispositions. Unfortunately, however, the lack of research investigating differences among Type A individuals in the use of coping strategies to deal with these job contexts does not allow for more refined predictions of adaptational success in this group.

#### Situational Variables.

In the beginning of this paper's discussion on coping with stress, it was argued that coping is an activity that uniquely illustrates the interactionism in behavior. This is because coping activities are chosen in response to both personal and environmental characteristics and, more specifically, in response to the perceived relationships or fit between these personal and environmental characteristics. These relationships are highly complex, and thus it is difficult to pin down exactly how or why a particular coping strategy is employed in a given situation by a given person. The three theoretical approaches to coping that have been discussed have each attempted to answer these questions, but an additional class of variables has also been investigated with respect to how coping may be modified by the situation. These situational factors are discussed in this section.

Situational variables have been posited to influence the stress and coping processes in psychodynamic, relational, and individual difference approaches to the topic. For purposes of this review, the situational factors that are relevant to stress appraisals and coping may be distinguished in terms of the manner and level at which they exert their influence on the individual. Thus, organizationally-controlled incentives, in the form of pay, contingencies, promotion and transfer opportunities, constitute a potentially important characteristic of 1

work environments. Similarly, in a relational view, the individual's appraisals of the P-E transactional context with respect to personal well-being may be substantially influenced by the type, size, and specific contingencies associated with incentives for performance offered by the organization. Contingencies associated with specific promotion or compensation systems may, for example, facilitate or modify primary appraisals of threat, loss/harm, or challenge. The specific linkages between rewards and criterion performance behaviors may also effect secondary appraisals that identify the range of coping options available and their relative efficacy in reducing perceived stress.

The situational factors related to the social-psychological context of work are those variables that are frequently associated with department or unit characteristics. Thus, social-psychological characteristics of the work context may be influenced by supervisory style and perceived co-worker social support. Also, as with incentive-related factors, social situational variables may exert their effects at multiple points in the process between stress-coping and performance.

Specific task-related characteristics also exert an influence on stress and coping activities. The effects of noise, extreme temperatures, dangerous environments, monotony, role conflict and ambiguity, and workload on cognitive, behavioral and affective indices of stress outcomes have been reviewed previously. In addition to these factors, specific task characteristics that relate to the predictability and controllability of stressor occurrence in the work context may be important in influencing both perceptions of stress and coping activities related to performance following the stressful episode. The following section will review research evidence on organizationally-controlled, social-psychological, and task-related characteristics of the work context as they affect the stress and coping processes.

Organizationally-Controlled Variables. Of the organizationally-controlled variables that have been suggested as influencing the coping process, perhaps the primary one concerns the incentives offered by the organization. These incentives might affect both emotion-focused and problem-focused coping activities. For example, assume that an organization's most salient incentive was quick promotion of its employees, and that a particular employee had to cope with the stress related to a recent promotion. In this situation, the employee might cope by cognitively emphasizing how wonderful it is to advance quickly and thereby suppress feelings of anxiety (emotion-focused). Alternatively, coping might take place by actively immersing oneself in the new position (problem-focused). The point in this example is that coping might take place in an entirely different way if the organizational incentives were different, e.g., if the organization emphasized support systems for employees. Unfortunately, research on the effect of incentives has not examined, in detail, how these incentives affect individual performance in terms of coping activities. Similarly, although it seems plausible that organizationally-controlled variables other than incentives could influence coping, research on these variables has concentrated on areas other than coping activities.

Social Situational Variables. Relational researchers have identified social situational factors as an important determinant of stress and coping processes, positing that these factors exert influence in the workplace in two major ways. Folkman (1984) suggests that social resources represent important buffering strategies for dealing with perceived stress. A second suggestion is that social support (from supervisors, friends, etc.) may exert an influence on perceptions of stress by modifying perceived role expectations and demands (Katz & Kahn, 1966). The following studies examine these issues in more detail.

Kobasa and Puccetti (1984) investigated the effects of personality and social support as moderators of the relationship between stressful life events and illness among 170 male, middle- and upper-level executives in a questionnaire survey. Two aspects of perceived social support, relations at work and at home, were measured along with personal hardiness, a personality construct referring to a constellation of personality characteristics (i.e., commitment, control, and challenge) that influence both appraisal and coping strategies selection. The results obtained indicate several interactions between hardiness and social support. Personal hardiness was significantly associated with decreased illness symptomology. Similarly, executives under high stress who perceived support from their boss demonstrated less illness symptomology than did executives without work support. Finally, family support was associated with increased reports of illness, but only for persons low in hardiness.

Kobasa and Puccetti interpret their findings in terms of Lazarus' transactional approach. They suggest that work support may function to modify the individual's appraisal of threat by providing emotional support (i.e., recognition that the individual is "not alone") and facilitating effective problem-focused coping strategies. Kobasa and Puccetti also suggest that the unexpected findings of a positive relationship between family support and illness for low hardiness individuals may be due to the nature of coping strategies facilitated by family support. They argue that family support, in terms of increased expressiveness, may encourage emotion-focused coping even when problem-focused coping might be more adaptive. Thus, although direct evidence is not available, the type of support one receives may influence both the strategy and the effectiveness of coping.

Wells (1982) used a survey questionnaire to investigate the effects of perceived social support in four interpersonal relation domains (supervisors, spouse, co-workers, and friends and relatives). Specifically, Wells was interested in the relationship between objective job condition and perceived stress among blue-collar workers. Similar to the findings obtained by Kobasa and Puccetti (1984), supervisor support was found to exert a significant effect on four (of nine analyzed) perceived stresses, while spouse support significantly affected only one perceived stress. In contrast to Kobasa and Puccetti (1984), however, friend and relative support was found to exert an influence on three perceived stresses.

The differences obtained between these two studies may be due to the different classification schemes used to analyze interpersonal support relationships.

Lefcourt, Martin, and Saleh (1984) investigated the hypothesis that internal locus of control and social support interactively moderate the effects of stressful life events and mood disturbance. Three studies employing a questionnaire methodology were conducted. The results obtained indicate that locus of control and social support interact in their amelioratory influence on negative mood. Thus, social support reduced the effects of negative life events on mood disturbance only among those individuals with an internal orientation. Similar results were obtained by Sandler and Lakey (1982) in their investigation of social support and locus of control.

Lefcourt et al. (1984) suggest that their findings emphasize the importance of investigating the interactive effects of individual differences on the stress-outcome relation. In their studies, neither internal orientations nor presence of social support alone exerted consistent powerful effects on the stress-outcome relation. As they state, "Social supports, then, may have different meanings for persons with differing orientations toward their work and social interactions," (p. 388). Thus, the value of social support depends not only on its presence but on the individual's orientation for using these resources to cope with stressful episodes. Similarly, Lefcourt et al. (1984) suggest that previous findings that conclude that locus of control moderates the stress-outcome relation, should be reexamined in terms of other, potentially interactive variables such as social support.

Task Variables. Task-related situational variables include those aspects of the work context that emerge as a direct result of the nature of the work itself. As noted previously, jobs may differ in terms of the presence and type of stable environmental stressors (e.g., extreme temperatures, noise). In addition, jobs may differ in terms of the controllability and predictability of environmental stressors. Consistent with the transactional approach, the pattern and predictability of uncontrollable environmental stressors may exert an important influence on the individual's stressful appraisals and subsequent coping activities.

Glass and Singer (1972) conducted a number of studies to investigate the effects of controllability and predictability of stress episodes on post-stressor task performance. Their results, and those of other investigators using a wide variety of stressor events (see Cohen, 1980, for a review), indicate that after-effects on performance are most likely to occur following exposure to unpredictable rather than predictable stressors. In addition, several studies on the effects of stressor controllability have demonstrated that perceived control over the initiation and termination of the stressor substantially reduced post stress performance deficits (e.g., Mills & Krantz, 1979; Sherrod & Downs, 1974). Further, research studies extending the Glass and Singer hypothesis to investigate the influence of uncontrollability on social

behavior after-effects provide laboratory evidence that persons exposed to uncontrollable and/or unpredictable stress subsequently demonstrate increased aggressive (Donnerstein & Wilson, 1976) and fewer prosocial helping behaviors (Cohen & Spacapan, 1978; Sherrod & Downs, 1974).

As Cohen (1980) implies in his review of the after-effects research, several of the more likely explanations proposed for these empirical findings represent elaborations or modifications of the "adaptive-cost" hypothesis developed by Glass and Singer. Basically, the adaptive-cost hypothesis asserts that an individual has limited cognitive (or attention) resources. Unpredictable or uncontrollable events exact a "cost" in these cognitive resources because they force an individual to adapt (or direct attention) to an unforeseen event. This cost then detracts (in the cognitive resources available) from the individual's normal performance capability. Cohen (1978) suggests that situational contexts characterized by unpredictable and/or uncontrollable stressors are associated with both threat appraisals and increased cognitive demands for evaluation of coping options. Cohen further suggests that prolonged exposure to this context and/or increased demands for attention result in cognitive fatigue; that is, there is insufficient attentional capacity available to perform demanding tasks (cf. Cohen, 1980).

Cohen (1978) further identified several interesting implications derived from this cognitive overload explanation of performance and the social behavior deficits that follow stressor exposure. He suggests that inadequate attentional reserves might prompt individuals to focus attention on only those aspects of the environment that are most relevant to task goals. Social cues unrelated to goal accomplishment are believed to be neglected in these situations, which then leads to the increased tendencies for insensitivity to others that have been observed. Thus, inadequate attentional reserves and the narrowing of attention to only crucial task demands may also lead to oversimplification and distortion of interpersonal communications (cf. Cohen, 1980).

In a recent series of laboratory studies, Spacapan and Cohen (1983) investigated the effects of stressor exposure expectations on stress responses. Consistent with the emphasis by transactional theorists (e.g., Lazarus, 1966) on subjective appraisals of the environment, Spacapan and Cohen hypothesized that anticipation of exposure to a stressor would produce the same responses and after-effects as demonstrated by persons actually exposed to a stressor. Results obtained in three studies provide support for their hypothesis. Subjects who expected to be exposed to the stressor demonstrated lower frustration tolerance and increased blood pressure relative to the control groups. In addition, perceived control over stressor termination reduced the negative effects and after-effects of anticipated stress exposure. Spacapan and Cohen caution that, although their findings are very similar to those found under actual stress exposure conditions, it is unclear whether both actual and laboratory effects are indeed mediated by the same psychological processes.

Before closing this discussion of coping, a final study is mentioned that brings together individual differences, job conditions, stressful events at work, subjective stress, and most importantly, job performance. Motowidlo, Packard, and Manning (1984) gathered information from nurses about individual differences, stressful events and feelings about these events, as well as independent ratings of the nurses' performance. In brief, the results indicated stressful events occur more frequently to younger, Type A persons, and are more intensely stressful for persons with strong fears of negative evaluation. In addition, highly stressed nurses are less composed under pressure, and are less sensitive, tolerant, and warm toward patients and coworkers. Motowidlo et al. (1984) conclude that both individual differences and job conditions result in events that generate feelings of stress, stress that is subjectively determined and influenced by both the job and the person. Of most interest, however, is the finding that the increase in stress does have an impact on job performance, and causes nurses to be less effective in dealing with others on the job.

Summary. Situational variables are those aspects of an organization, social situation, or task that have influence on the manner and level at which coping activities are conducted. The first class of these, organizationally-controlled variables, have an intuitive relationship with coping strategies, but there is little empirical research in the area. There is some research on social situational variables that has yielded somewhat mixed results. In general, social support, in particular support from one's superiors, has been shown to moderate the effects of stress-outcome relations. Predictability and controllability of anticipated and actual stress occurrences are also important moderators of stress outcomes and subsequent performance relations. Finally, consistent with research conclusions obtained in studies of the effects of individual differences on stress and coping, researchers investigating situational variables emphasize the person-situation interaction as a crucial ultimate determinant of subsequent coping activities. The recent study by Motowidlo, Packard, and Manning (1984) nicely illustrates this interaction, and its resultant effect on job performance.

Integration - Coping With Stress. Although there is at present a fair amount of research related to coping with stress, the research appears to be a long way from presenting a clear picture of either the coping process or its results. Basically, the primary purpose of coping activities is to reduce, manage, tolerate, or minimize perceived stress. The problem, however, is that this process can occur in many different ways and can produce widely varying results. In the preceding discussion of coping, both the theoretical approaches and the various moderators of the stress-coping transaction have illustrated what a complex pattern of interactions is taking place. Therefore, a heuristic model of stress, coping, and performance is presented in order to place some structure into this pattern of interactions. As seen in Figure 4.7, the characteristics of both the objective environment and the person combine to influence subjective perceptions, primary and secondary

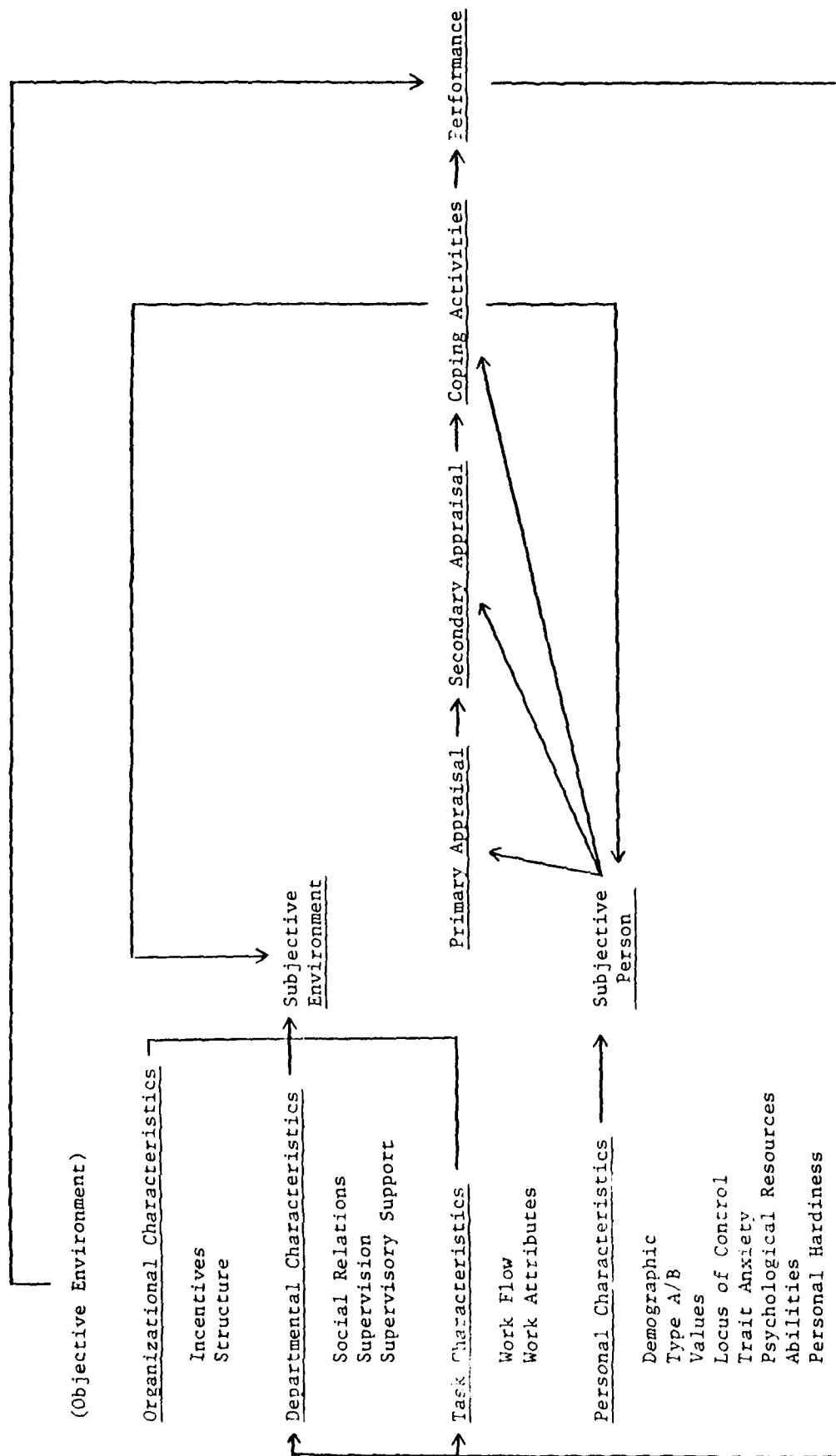


Figure 5. An integrated heuristic framework of stress, coping, and performance adapted from Lazarus (1980).

appraisals, coping activities, and ultimately, performance. In addition, performance outcomes feed back into departmental, task, and personal characteristics, which may then affect subsequent coping and performance. While this model is admittedly heuristic, it does supply a conceptual framework in which coping can be visualized, and the variables affecting coping can be presented.

Finally, in closing this chapter's discussion on stress and the many variables that affect it, it is again emphasized that stress is the result of the interaction of a wide variety of personal and environmental factors. Because of these complex interactions, it is usually impossible to describe the exact effect of any one personal or environmental characteristic, or the effect of any one life event or coping strategy. Stress, like human behavior in general, is a dynamic process that is sensitive to relatively small differences in persons, situations, and their combination. Stress is also highly linked to behavioral reliability, and an optimal reliability program will take into account the complexities of the stress process. Thus, it is important that a behavioral reliability program be flexible enough that it can make decisions based on the most probable outcomes, yet adapt to meet the unique needs of each individual case. Such flexibility is necessary because of the unique interactions that characterize behavior, particularly under stress. In the next chapter, a particular aspect of unreliable behavior is discussed, that of substance use and abuse. Although much of the research described in that chapter relates to personal characteristics, substance use and abuse is also the result of the interactions that produce all of behavior.



## CHAPTER 5

### SUBSTANCE USE AND ABUSE

There are few categories of behavior that have more obvious importance to personnel reliability than those of substance (drug) use and abuse. Of the two, the negative effects of substance abuse have been far more extensively documented and studied than substance use alone, but it is important to realize that even moderate levels of substance use may easily result in negative outcomes in certain occupations or situations. Among these negative outcomes are accidents, organizational conflict, job dissatisfaction, vandalism, absenteeism, turnover, and lack of productivity. In addition, negative effects may occur indirectly through such intermediate processes as family conflict or the deterioration of health. Therefore, an understanding of the factors involved in substance use and abuse is integral to an optimal personnel reliability program.

In this chapter, evidence will be discussed concerning psychosocial correlates of substance use/abuse, since it is these variables that comprise the potential predictors for a personnel selection and monitoring system aimed at minimizing this problem. Investigations of these psychosocial correlates can be divided into two distinct types, those that have studied addiction, and those that have studied substance use in the non-addictive range. Studies of addiction have focused on individuals formally diagnosed as alcoholics or drug (usually narcotics) addicts and have been carried out in institutional settings, either hospitals, substance abuse treatment programs, or criminal detention facilities. In addition, nearly all of the alcoholic samples that have been studied have been middle-aged or older. On the other hand, investigations of substance use in the non-addictive range have studied correlates of alcohol and illicit drug (e.g., marijuana) use in non-addicted samples, usually with high school and college students. Thus, one body of research that involves addiction provides evidence related to prediction at the upper end of the substance abuse continuum with primarily middle-aged, institutionalized subjects, while the other body of research pertains to prediction in the more normal range of the continuum with younger, student groups. In the next two sections, research findings will be described separately from each of these two bodies of investigation. In the final section, these findings are integrated and evaluated in terms of both the similarities and differences among them and their implications for personnel reliability programs.

#### Psychosocial Correlates of Addiction

The term "addiction" may be defined as a compulsive physiological or psychological need for a given drug or drugs. In the ensuing discussion, the correlates of both alcoholism and drug addiction will be jointly described under this rubric of "addiction", since the two groups frequently share common personality characteristics. Detailed evidence to support this procedure will be given later, but four studies are mentioned now in order to illustrate this striking similarity between alcoholics and drug addicts. In an early review of findings with the Minnesota

Multiphasic Personality Inventory (MMPI), Hill (1962) concluded that antisocial predisposition was the central contributing factor in both alcoholism and drug addiction. This conclusion was partly based on Hill's own finding of a dramatic similarity in the mean profiles of samples of 184 alcoholics and 192 drug addicts (as well as 195 criminals) (Hill, Haertzen, & Davis, 1962). Further support for the MMPI similarity of military alcoholics and drug addicts was later provided by Black and Heald (1975). Finally, Kranitz (1972) found that sizable alcoholic and heroin addict samples obtained virtually identical mean scores on the alcoholism scale developed by MacAndrew (1965), and suggested that the scale measures a general addictive propensity.

In order to identify and predict which individuals are most at risk for substance abuse problems, a number of different measures have been developed. One obvious approach to this problem is simply to ask individuals directly about their typical substance use behavior, using questions such as "Can you stop drinking without a struggle after one or two drinks?" or "Do you feel you are a normal drinker?" In a review of self-report scales designed to detect alcoholism, Miller (1976) termed scales constructed from such items as "direct" alcoholism scales, in contrast to the "indirect" scales from traditional personality inventories that will be discussed later. The most recent and extensively validated of the "direct" alcoholism scales is the Michigan Alcoholism Screening Test (MAST). Introduced by Selzer (1971), the original MAST consists of 25 yes-no questions, two of which are given above.

The MAST has demonstrated substantial validity in differentiating diagnosed alcoholic from nonalcoholic samples. It has correctly classified hospitalized alcoholics at rates of 97 percent and better (Selzer, 1971; Moore, 1972; Favazza & Pires, 1974; Selzer, Vinokur & van Rooijen, 1975) and outpatient alcoholics at a rate of 94 percent (Selzer et al. 1975). However, some concern has been expressed about the number of people falsely classified as alcoholics by the scale. This has been 5 percent (Selzer, 1971) and 13 percent (Moore, 1972) in control samples screened for alcoholics, and between 17 percent and 33 percent in six separate unscreened samples (Favazza & Pires, 1974; Selzer et al. 1975). Since an individual is predicted to be an alcoholic when his/her score on the MAST exceeds a certain cutoff, changing the cutoff score could alter the level of these results.

Regardless of the optimal cutoff score, the MAST is clearly capable of sorting individuals along the alcohol abuse continuum. This contention is further supported by the finding that samples manifesting intermediate levels of alcohol abuse, such as drunk driving and drunk and disorderly behavior convictions (Selzer, 1971) and borderline alcoholics (Moore, 1972), obtain mean scores falling between those of alcoholic and nonalcoholic control samples. Expressed in correlational terms, the point-biserial validity of the MAST has been reported as .90 in an extreme comparison (hospitalized alcoholics vs. drivers license renewal applicants) and .79 in a less extreme comparison (pooled inpatient and outpatient alcoholics vs. pooled license applicants and traffic law

violators) (Selzer et al. 1975). In the same investigation, a shortened MAST (SMAST), consisting of 13 unit weighted items, demonstrated point-biserial validities of .94 and .83, respectively, in the two comparisons described above. However, all of the impressive results that have been reported for this particular example of the direct approach to alcoholism detection have been obtained under circumstances conducive to honest responding. Given the obviousness of its items, it seems very likely that the MAST would be far less valid in most selection contexts.

In contrast to the direct approach of identifying potential substance abusers, most well-known personality inventories work indirectly by assessing the personal characteristics typically associated with alcoholics and drug addicts. Thus, items in these inventories might measure an individual's emotional adjustment under the hypothesis that this adjustment is related to a criterion such as substance abuse. A large proportion of the research done in this way has made use of the Minnesota Multiphasic Personality Inventory (MMPI).

The MMPI (Hathaway & McKinley, 1940) was empirically constructed based on the strategy of contrasting groups. In this procedure, two groups that differ with respect to some attribute (e.g., schizophrenics vs. normals) respond to a set of items, and those items that best separate the responses of each group are retained in a scale for use in diagnosing or predicting that attribute (schizophrenia). Although originally intended for clinical use in identifying certain abnormal conditions, the MMPI scales have since been shown to have meaning within the normal range of behavior. Also, the item pool of the MMPI has spawned construction of numerous other scales, including scales specifically aimed at alcoholism. The scale developed by MacAndrew (1965) was mentioned earlier as yielding nearly identical scores for both alcoholics and drug addicts. Other alcoholism scales have been constructed by Hampton (1953), Holmes (reported in Button, 1956), and Hoyt and Sedlacek (1958) by contrasting the item responses of alcoholics and normal controls.

The most common approach to validating both the original (or clinical) MMPI scales and the alcoholism scales developed from the MMPI has been to compare scale mean scores between substance addicts and appropriate control samples. The statistical index resulting from this comparison, the *t*-ratio, can then be tested for statistical significance and converted to a correlational index for comparisons across investigations. The majority of these investigations have sought to discover the personality characteristics that differentiate addiction from other types of deviance, a concern that is not relevant to most organizational situations. Only eight studies were located in the literature that reported the most relevant information for organizations, the differences between substance addicts and normal controls on the MMPI clinical alcoholism scales. These results are summarized in Table 5.1 as point biserial correlations that were calculated from the *t*-ratios or means and standard deviations provided in the original articles (conversion formulas from Glass, 1977).

Table 5.1. Substance addicts vs. normals on the MMPI.

Criterion	Abusing Sample	Comparison Sample	MMPI Clinical Scales										Reference
			Hypochondriasis	Depression	Hysteria	Psychopathic Deviate	Male	Female	Neuroticism	Extraversion	Introversion	Psychoticism	
Narcotics addict vs. Nonaddict	45 male rehabilitation program participants	45 male volunteers from the same community	.12	.01	.27	.37	.23	.13	.44	.09	-.11	.34	Wilbert & Hammond, 1967
Alcoholic vs. Nonalcoholic	234 AA males + 30 hospitalized males = 314 males	42 males abstainers + 180 male social drinkers = 222 males		.50									Manson, 1949
Alcoholic vs. Nonalcoholic	124 AA females	78 female abstainers + 186 female social drinkers = 264 females		.30									
Alcoholic vs. Nonalcoholic	44 AA males	34 males	.34	.06	.32	.34	.44	.36	.45	.37	.27	.51	Hampton, 1953
Alcoholic vs. Nonalcoholic	38 hospitalized males	50 male veterans										.01	Hovt & Sedlacek, 1958
Alcoholic vs. Nonalcoholic	59 hospitalized males	50 male veterans										.78	
Alcoholic vs. Nonalcoholic	60 hospitalized males	60 males							.50	.49	.27	.26	Rich & Davis, 1969
Alcoholic vs. Nonalcoholic	60 hospitalized females	60 females							.59	.60	.10	.43	
Alcoholic vs. Nonalcoholic	38 hospitalized males	31 male medical patients							.63	.54	.04	.34	Vega, 1971
Alcoholic vs. Nonalcoholic	40 hospitalized males	31 male medical patients							.50	.60	.22	.28	
Alcoholic vs. Nonalcoholic	32 hospitalized males tested an average of 13 years earlier as college students	148 randomly selected male college classmates	.12	.08	.05	.24	.08	-.06	.11	.11	.20	-.06	Loper, et al., 1973
Alcoholic vs. Nonalcoholic	35 hospitalized males tested an average of 13 years earlier as college students	148 randomly selected male college classmates							.10	.14	-.05	.18	Hoffman, et al., 1974

\* p < .05 \*\* p < .01 \*\*\* p < .001

It can be seen in Table 5.1 that only one of the eight investigations has reported results for drug addicts, while the remaining seven have studied alcoholics. Ten of the twelve comparisons listed in the table involved males. The first six investigations listed were concurrent in design, while the last two represent articles based on a predictive design in which the college MMPIs of a group of middle-aged alcoholics were located. Given the 13-year average for the predictive time lag in these investigations, it is understandable that the correlations in the bottom two rows of Table 5.1 are far lower than those derived from the concurrent investigations.

Validities are shown in Table 5.1 first for the ten MMPI clinical scales and then for the four alcoholism scales. The results clearly show the relationship between MMPI scores and addiction, i.e., substance addicts score much higher on MMPI scales than do normals. Among the clinical scales, this tendency is most pronounced for the Psychopathic Deviate (Pd) scale. This scale, designed as a measure of antisocial tendencies, was derived from the item responses of a sample of psychiatric delinquents, including some alcohol abusers (McKinley & Hathaway, 1944). The Depression (D) scale appears, based on the rather limited evidence in the table, to be the second most valid clinical scale for predicting addiction, its validity actually slightly exceeding that of Pd in the one drug addict investigation. Finally, the remaining clinical scales also appear to yield higher scores for addicts than normals, although these relationships are less consistent and well-documented.

In regard to the alcoholism scales, it appears in Table 5.1 that the Hampton scale and the Holmes scale obtained the highest validities, while the MacAndrew scale performed less well. The Hoyt and Sedlacek scale did quite poorly in all investigations except that in which it was first developed. Yet, while the better alcoholism scales yielded very good validities, they demonstrated no clear superiority over certain clinical scales such as Psychopathic Deviate (Pd) or Depression (D). Thus, both clinical and alcoholism MMPI scales appear relevant to identification and prediction of substance abusers in comparison with normals.

It was previously stated that the results in Table 5.1 suggest elevations on all MMPI clinical scales for substance addicts relative to normals and that, of these, Pd produces the greatest differentiation between the groups. Further support for this contention can be found in the extensive literature in which norm-based MMPI profiles of a large number of substance addict samples have been presented. Representative of the results for alcoholics is the description of the mean profile of a sample of over 1,000 white male alcoholics by Hodo and Fowler (1976). In this mean MMPI profile, all of the clinical scales were elevated at least one standard deviation above the mean, Pd and D were over two standard deviations above the mean, and Pd showed the greatest elevation. The description of a comparable-sized sample (N=871) of male narcotics addicts by Berzins, Ross, and Mott (1971) showed exactly the same results, except that the third highest scale in the mean profile, the Schizophrenia (Sc) scale, was also over two standard deviations above

the mean. Numerous MMPI descriptions of smaller samples of drug addicts also provide supporting results (e.g., Hill, Haertzen, & Glaser, 1960; Hill, Haertzen, & Davis, 1962; Olson, 1964; Gilbert & Lombardi, 1967; Sutker, 1971; Schoolar, White, & Cohen, 1972; Sutker & Allain, 1973; Black & Heald, 1975; Jarvis, Simnegar & Traweek, 1975; Zuckerman, Sola, Masterson, & Angelone, 1975).

In all, 14 of the investigations previously cited have reported mean MMPI profiles for a total of five alcoholic and 19 drug addict groups. Of the 192 means reported on eight MMPI scales (Hs, D, Hy, Pd, Pa, Pt, Sc, Ma) across these 24 samples, 191 are elevated above the mean, and most are more than a standard deviation above. Nineteen of these 24 samples showed the highest mean elevation on Pd, while in four samples Pd was second highest, and in one sample it was third. All five samples in which Pd did not show the highest elevation consisted of individuals habituated to the use of "soft" drugs, such as amphetamines and hallucinogens, rather than narcotics. In each of these cases the Pd mean was exceeded by elevations on one or both of the "psychotic" Schizophrenia (Sc) and Mania (Ma) scales, elevations attributed by Zuckerman et al. (1975) to the effects of these drugs rather than enduring personality dispositions. Otherwise, all five alcoholic, all 12 narcotics addict, and 2 of the 7 "soft" drug abusing samples showed their highest elevations on Pd. These 24 samples consisted variously of males and females, blacks and whites, teenagers and adults, military and civilian individuals, and substance addicts tested from the early 1950s through the mid-1970s. Clearly, the Pd scale represents a robust and effective predictor of substance abuse, while all other MMPI clinical scales have documented validity as well. Further, the MMPI alcoholism scales have also demonstrated their efficacy in identifying substance abusers.

Non-MMPI techniques. The limited research that has been carried out on alcoholics and drug addicts using personality assessment techniques other than the MMPI further supports antisocial disposition, the dimension measured by Pd, as the personality characteristic most strongly related to addiction. For example, Kurtines, Hogan, and Weiss (1975) administered the 18-scale California Psychological Inventory (CPI) to 59 white male heroin addicts. Although no normal comparison group was employed in this investigation, the addicts obtained their lowest t-score mean on the Socialization (So) scale, the CPI scale most directly targeted (through low scores) at antisocial disposition.

The individuals' previous history of antisocial behavior, such as arrest or problems with school authorities, provides another source of indicators for the antisocial disposition construct. Items of this type are often referred to as biographical data or biodata, and are sometimes included in personality inventories including the MMPI Pd and CPI So scales. The two items mentioned above, number of arrest and problems with school authorities, were found by Plag and Goffman (1973) to significantly differentiate a sample of 98 Naval recruits who admitted to a history of drug abuse (and were subsequently discharged from the Navy) from a control sample of 135 recruits who gave histories of no

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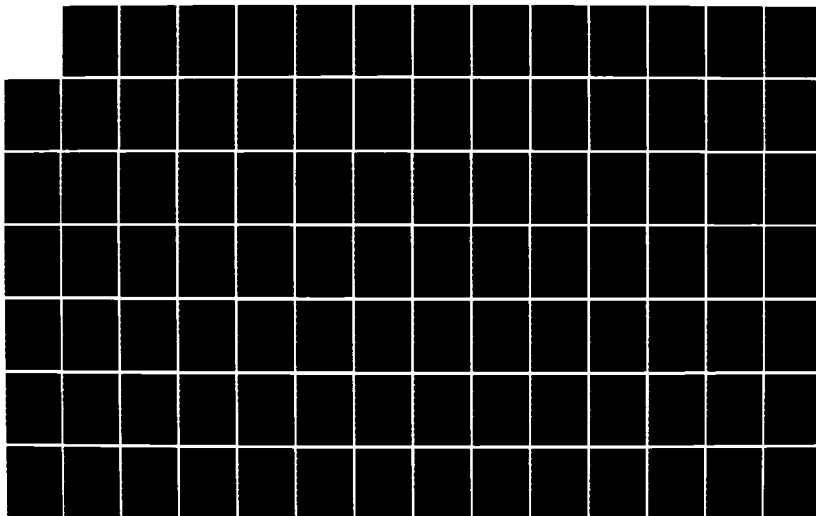
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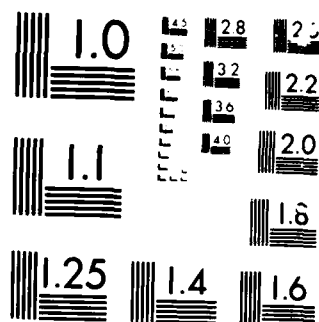
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drug use. Among the drug abusers, 48 percent had been expelled and/or suspended from school more than once, compared to 16 percent of the controls ( $p < .001$ ), and 46 percent had been arrested or otherwise detained, compared to 16 percent of the controls ( $p < .001$ ). This comparison was extended by Nail, Gunderson, Kolb, and Butler (1975) to a larger sample of 458 active duty Navy enlisted men who had reported voluntarily to the Naval Drug Rehabilitation Center. Thirty percent of this group had been expelled/suspended more than once, and 38 percent had been arrested/detained.

All of the investigations of addiction referred to so far in this section have been concurrent rather than predictive in design, with the exception of the analysis of the college MMPIs of middle-aged alcoholics reported by Loper et al. (1973) and Hoffman et al. (1974). As seen earlier in Table 5.1, these two predictive investigations also indicate that Pd provides the best predictor among all MMPI clinical and alcoholism scales of future alcoholism. Further evidence, perhaps more clinical in nature, of the importance of antisocial personality disposition as a predisposing factor in alcohol abuse derives from Jones' (1968, 1971) analysis of longitudinal data for both men and women. The subjects in these analyses, participants in a long-term longitudinal study, were classified on the basis of interview information obtained at ages 33, 38, and 43 into five drinking groups: problem drinkers, heavy drinkers, moderate drinkers, light drinkers, and abstainers. The basic data were psychologists' ratings of these individuals' personality characteristics during junior high, senior high, and adulthood. Among the men, there were many rated characteristics that differentiated the various drinking groups at statistically significant levels. Jones (1968) summarized these findings by characterizing male problem drinkers, both before and after the onset of alcohol abuse, as "undercontrolled, impulsive, and rebellious." While the findings for women were more complex, Jones (1971) concluded that this same core of antisocial personality traits is also prominent in the pre-alcoholic personalities of women.

Summary. In the preceding section, a number of psychosocial correlates of substance addiction have been discussed as potential candidates for use in minimizing this onerous organizational and societal problem. It has been shown that addicted abusers of both alcohol and drugs obtain highly similar scores on direct and indirect measures associated with abuse. The validities obtained with direct measures are extremely high (.80s and .90s in correlational terms), but have come from situations conducive to honest responding, and would likely be much lower in an organizational setting. Indirect measures have also been quite valid, particularly the MMPI Pd and D scales and the Hampton and Holmes alcoholism scales. Again, however, the validities obtained were markedly higher in concurrent investigations than in extended predictive studies.

In studies employing measures other than the MMPI, there is very good convergent support for the characteristics identified by the MMPI as associated with addiction. Both other personality assessment devices and biographical data research report that an antisocial predisposition and tendency toward depression are strongly related to serious substance

abuse. In addition, these conclusions are based on a large number of widely divergent investigations, and appear to be robust to sampling variations and over more than 20 years of research. It appears well-documented, therefore, that these psychosocial characteristics are the indicators most useful in a selection and monitoring program aimed at the addicted substance abuse problem in organizations.

#### Psychosocial Correlates of Substance Use in the Non-Addictive Range

As mentioned in the introduction to this chapter, the research regarding substance use in the non-addictive range may be seen as a separate literature from that dealing with addiction. Subjects in addiction research have typically been middle-aged and institutionalized, while subjects in studies of the non-addictive range are generally younger, high school and college students who have not as yet encountered any serious substance abuse problems. Nevertheless, similarities do appear between the two literatures, similarities that will be discussed both in this section and in the later integration section. One such similarity is that users of both alcohol and drugs can again be considered together in terms of common psychosocial characteristics.

Three investigations in the non-addictive range were located that addressed the question of whether predictors operate in the same way with users of alcohol and users of drugs. These are the investigations reported by Biggs, Orcutt, and Bakkenist (1974), Stokes (1974), and by Jessor and Jessor (1975) and Jessor (1976) for the same sample. The numerical results reported by Stokes and by the Jessors suggest that within the non-addictive range, the relative validities of various predictors are roughly the same for both alcohol and marijuana use, but that alcohol use is simply less predictable. In other words, if predictor A is more valid than predictor B in studies of drug use, this same rank order will likely hold in studies of alcohol. The absolute level of validity, however, will probably be lower in studies of alcohol use. Therefore, it again appears reasonable to discuss results together from both alcohol and drug use studies, although the absolute level of the relationships may differ for the two types of substance use.

A great variety of psychosocial measures have been studied in relation to substance use in the non-addictive range, actually far more than in studies of addiction. For purposes of discussion, these measures are grouped into twelve broad categories. The first four of these categories are: attitudes toward substance use, perceived peer support for substance use, political radicalism, and religiosity (i.e., strength of religious dedication rather than particular religious affiliation). The fifth category is the antisocial disposition construct that was discussed in the section on addiction research. The remaining seven categories correspond to those in the taxonomy of self-report personality scales that were presented earlier in Chapter II on personal characteristics. These are Potency, Adjustment, Agreeableness, Dependability, Intellectance, Affiliation, and Miscellaneous Personality.

Using this format, twenty-five investigations that have reported relationships between psychosocial variables and substance use in normal, nonaddicted samples are summarized in Table 5.2 and listed individually in Table 5.3. While these twenty-five investigations are probably not exhaustive of the domain of investigations pertinent to organizational concerns, taken as a whole they are certainly representative. The investigations are also quite different from each other, a conclusion that is readily apparent from a perusal of Table 5.3. Therefore, the summary values in Table 5.2 are explained in some detail so that information is not as easily lost in the conversion of individual studies to a standardized table.

It can be seen in Table 5.2 that the twelve predictor categories differ dramatically in the number of statistical tests of their relationship with substance use. They also differ dramatically in the number of correlations with substance use. In the first three categories of attitudes toward substance use, peer support for substance use, and political radicalism, 100 percent of the statistical tests are positive and statistically significant. Unfortunately, since so few of these findings are expressed or are expressible as correlations, the median  $r$ 's given in the bottom row of Table 5.2 do little to summarize the strengths of these relationships. Inspection of Table 5.3 shows that, whenever attitudes or peer support measures are included in an investigation, they almost always provide the strongest predictors of substance use. Conversely, Table 5.3 indicates that the validity of political radicalism is not quite as strong.

Nineteen of the twenty reported relationships between religiosity and substance use are negative, with seventeen of these reaching statistical significance. This is powerful support for the conclusion that the more strongly religious beliefs are held, the less likely the individual is to engage in substance use. Correlational results are sparse for the religiosity category, but inspection of Table 5.3 indicates that religiosity is often a better predictor of substance use than just about all of the personality measures except those of antisocial disposition.

In contrast to the previous four predictor categories, the findings for the eight personality categories are well captured by the summary correlations given in Table 5.2. This summary shows that, congruent with the findings in the addiction research, antisocial disposition is by far the best personality predictor of substance use in nonaddicted samples. All twenty-three reported relationships between antisocial disposition measures and substance use are positive and statistically significant, and the median of the eight correlations reported is .50.

For the remaining personality categories, nearly all have some validity but Dependability appears to yield the highest relationships. Thirty-two of these relationships are reported between measures of Dependability and substance use and 94 percent of them are in the desired negative direction, 69 percent significantly so (statistically). Further, the median correlation is a respectable  $-.31$ , illustrating that dependable individuals tend not to engage in substance use. That Dependability

Table 5.2. Summary relationships of psychosocial variables with substance use.

SUMMARY INFORMATION	Attitude Subs. Use	Peer Support Subs. Use	Political Radical- ism	Religios- ity	Anti- social Disposi- tion	Po- tency	Adjust- ment	Agree- ableness	Depend- ability	Intellec- tance	Affilia- tion	Other Person- ality
Number of statistical tests	13	17	8	20	23	43	51	20	32	8	21	69
% of positive relationships	100%	100%	100%	0	100%	53%	16%	5%	3%	50%	8%	
% of negative relationships	0	0	0	95%	0	23%	67%	75%	94%	38%	88%	
% significant positive (p<.05 or better)	100%	100%	100%	0	100%	21%	4%	0	0	25%	4%	30%
% significant negative (p<.05 or better)	0	0	0	85%	0	7%	29%	25%	69%	13%	36%	
Number of correlations	1	3	1	2	8	16	24	5	14	3	5	27
High positive correlation	.59	.92	.52	none	.60	.35	.22	none	none	.21	none	.43
Low positive correlation	.59	.65	.52	none	.14	.04	.03	none	none	.19	none	
High negative correlation	none	none	none	-.38	none	-.34	-.45	-.18	-.48	-.29	-.24	-.40
Low negative correlation	none	none	none	-.34	none	-.05	-.01	-.01	-.10	-.29	-.03	
Median correlation	.59	.88	.52	-.36	.50	.14	-.12	-.03	-.31	.19	-.13	

Table 5.3. Psychosocial correlates of amount of substance use.

Criterion Subjects	Sample Size	Statistic	Attitudes Subj. Use	Peer Support Subj. Use	Political Radicalism	Religiosity	Social Disposition	Potency	Adjustment	Agreeableness	Dependability	Intellectance	Affiliation	Other Personality	Variability	Reference
Amount of substance use	70-85 males & females	F				-.38***			-.07		-.10				C	Baskett, G.D., & Myvander, R.W., 1973
Amount of substance use	N's vary from 22 to 51; males & females varying F's	F		.65***		-.36***	.60***		-.05**		-.29***				C	Dunnatte, M.D., et al., 1980
Heavy drug use	30 males vs. 30 females	t <sub>p</sub>						.25 na	na		-.38**				P 3 yrs.	Gulas, I., & King, F.A., 1976
Amount of drug use; refused	7] males	F		5.3*				-0.6 0.4		-1.4 -2.1	-4.4** -9.8*** -2.3	1.4	-0.4 -5.2** -3.7*	-7.4*** -2.1 -5.3**	C	Hollroyd, K., & Kahn, M., 1974
Amount of drug use; refused	0? females			4.1*				-1.1 -1.2		2.9 -0.1	-3.6* 0.4 -0.2	8.3***	-1.1 -0.9 -0.6	0.3 -1.6 -1.1		
Drug user vs. non-user	48 males & 48 females	x <sup>2</sup> t <sub>p</sub>	sig***		.52***	sig***									C	Kohn, P.M., & Mercer, G.H., 1971
Drug user vs. non-user	100-81 males & 19 females	t <sub>p</sub>				sig***									C	Smart, R.G., & Fejer, D., 1969
Amount of substance use	100-81 males & 19 females	t <sub>p</sub>				sig***									C	Conroy, A.L., & Baskett, T.E., 1970
Amount of substance use	100-81 males & 19 females	t <sub>p</sub>				sig***									C	Conroy, A.L., & Baskett, T.E., 1970
Amount of substance use	100-81 males & 19 females	t <sub>p</sub>				sig***									C	Conroy, A.L., & Baskett, T.E., 1970





Table 5.3. Psychosocial correlates of amount of substance use. (Continued)

Population	Location	Sample Size	Fract. Female	Attitudes Subs. Use	Peer Support Use	Political Radicalism	Religiosity	Anti-Social Disposition	Po- tency	Adjust- ment	Acree- able- ness	Depend- ability	Intellec- tance	Affilia- tion	Other Person- ality	Val- id- ity	Refer- ence
Amount of Marijuana Use, 5 Friends Formed	High School Students	81 males vs. 82 females	F							MMPI Mani- fest Anxi- ety(R) -ns		Sensation seeking(R) -.33, .000 Adventure- someness (R) -.5, .000 Creativ- ity(R) -.21, .000			Authoritar- ianism -.49, .000	C	Victor, H.P., et al., 1973
Amount of Marijuana Use, 5 Non-user of Marijuana	High School Students	37 males vs. 82 males	C	sig*** sig*** sig***	sig*** sig*** sig***	sig** -ns sig*	-sig** -ns -sig***	Deviant behavior sig*** Deviant attitudes sig*		Aliena- tion(R) -ns				Indepen- dence(R) -sig***	Achieve- ment motiva- tion -sig* Expected academic achievement -ns	C	Jessor, R. et al., 1973
		32 fe- males vs. 146 fe- males		sig*** sig*** sig***	sig*** sig*** sig***	sig* -sig*** -sig***	-sig*** -sig*** -sig***	Deviant behavior sig*** Deviant attitudes sig***		Aliena- tion(R) ns				Indepen- dence(R) -sig***	Achieve- ment motiva- tion -sig*** Expected academic achievement -ns		
		27 males vs. 68 males		sig*** sig*** sig***	sig*** sig*** sig***	sig*** -sig*** -sig***	-sig* -sig*** -sig***	Deviant behavior sig*** Deviant attitudes sig*		Aliena- tion(R) -sig*				Indepen- dence(R) -sig***	Achieve- ment motiva- tion -ns Expected academic achievement -ns		
Amount of Marijuana Use, 5 Non-user of Marijuana	High School Students	19 fe- males vs. 71 fe- males		sig*** sig*** sig***	sig*** sig*** sig***	sig*** -sig*** -sig***	-sig*** -sig*** -sig***	Deviant behavior sig*** Deviant attitudes sig***		Aliena- tion(R) -ns				Indepen- dence(R) -sig***	Achieve- ment motiva- tion -ns Expected academic achievement -ns		
		27 males vs. 68 males		sig*** sig*** sig***	sig*** sig*** sig***	sig*** -sig*** -sig***	-sig* -sig*** -sig***	Deviant behavior sig*** Deviant attitudes sig*		Aliena- tion(R) -sig*				Indepen- dence(R) -sig***	Achieve- ment motiva- tion -ns Expected academic achievement -ns		
		19 fe- males vs. 71 fe- males		sig*** sig*** sig***	sig*** sig*** sig***	sig*** -sig*** -sig***	-sig*** -sig*** -sig***	Deviant behavior sig*** Deviant attitudes sig***		Aliena- tion(R) -ns				Indepen- dence(R) -sig***	Achieve- ment motiva- tion -ns Expected academic achievement -ns		
Time of Onset of Marijuana Use, 10- 15 Years Formed	High School Students	27, 181 males & 239 fe- males	F	59, 400 70, 500 71, 500	7, 500 71, 500 71, 500	-10, 100 -11, 300 -11, 300	Deviant behavior 58, 300 Deviant attitudes 38, 200		Aliena- tion(R) -2, 50					Indepen- dence(R) -2, 1	Achieve- ment motiva- tion -21, 200 Expected academic achievement -9, 300	P 2 yrs	Jessor, R. 1976



Table 5.3. Psychosocial correlates of amount of substance use. (Continued)

Criterion	Subjects	Sample Size	Statistic	Attitudes Subs. Use	Peer Support Subs. Use	Political Radicalism	Religiosity	Anti-Social Disposition	Personality	Agreeableness	Dependability	Intelligence	Affiliation	Other Personality	Validity	Reference
Time of onset of alcohol use (including no onset) - 5 groups formed	High school students	408:181 males & females	F	25.4***	27.4*** 10.7***		-6.2*** -ns	Deviant behavior 30.9*** Deviant attitudes 18.9***	Alienation (R) -ns				Independence (R) -ns	Achievement -7.9*** Expected academic achievement -3.4**	P 3 yrs	Jessor, M. & Jessor, S. 1975
Amount of alcohol use: 5 groups formed	College students	925 males & females	$\chi^2$		sig*** sig***		-sig*** -sig***								C	Dunn, D.A. et al. 1974
Amount of marijuana use: 5 groups formed	College students	737 males & females	F	.39***				Respect for law (R) .14***	Dissatisfaction with self (R) -.07*					Sensual hedonism .33*** Philosophical hedonism .19***	C	Stokes, J.S. 1974
Amount of marijuana use	College students	68 males	r					Respect for law (R) .46***	Dissatisfaction with self (R) -.13***					Sensual hedonism .43*** Philosophical hedonism .34***	C	Williams, A.F. 1965
Problem drinking scale	College students	91 males	r						Self-acceptance -.45*** Self-criticality (R) -.53***							Williams, A.F. 1966

Table 5.3. Psychosocial correlates of amount of substance use. (Continued)

Trispartin	Subjects	Sample Size	Statistic	Attitudes Subs. Use	Peer Support Subs. Use	Political Radical- ism	Religious- ity	Anti- Social Disposi- tion	Domi- nance -sig* Exhibi- tion -ns	Adjust- ment	Agree- able- -sig* Aggres- sion (R) -ns	Depend- ability	Intellec- tance	Affilia- tion	Other Person- ality	Val- id- ity	Refer- ence
High problem drinking scale vs. low problem drinking scale	College students	23 males vs. 22 males	t								Nurtur- ance -ns -sig* Aggres- sion (R) -ns	Order -ns Change(R) -ns	Intra- ception -ns	Auton- omy(R) -ns Affilia- tion -ns Success- ance -ns sig*	Achieve- ment -ns -sig* Deferece -ns Abase- ment -ns Endurance -ns Hetero- sexuality -ns	C	Williams, 1967
		24 males vs. 24 males									Nurtur- ance -ns Aggres- sion (R) -ns	Order -ns Change(R) -ns	Intra- ception -ns	Auton- omy(R) -ns Affilia- tion -ns Success- ance -ns	Achieve- ment -ns Deferece -ns Abase- ment -ns Endurance -ns Hetero- sexuality -ns		
Problem drinking scale	College students	31 males	F								Nurtur- ance -ns -sig* Aggres- sion(R) -ns -sig* -ns	Order -ns Change(R) -ns	Intra- ception -ns	Auton- omy(R) -ns Affilia- tion -ns Success- ance -ns	Achieve- ment -ns Deferece -ns Abase- ment -ns Endurance -ns Hetero- sexuality -ns	C	Williams, A.F. 1968

\* p &lt; .05    \*\* p &lt; .01    \*\*\* p &lt; .001

Note:

Names given within the matrix (beside the results) are the particular measure used in the study.  
More information can be obtained by consulting the original reference.

should prove to be the most valid of the six highly general personality constructs is not surprising since, according to the personality taxonomy presented earlier in Chapter 11, antisocial disposition (in reverse) is one specific manifestation of the Dependability construct.

The findings presented in Table 5.2 represent a rather extensive summary of the literature on the prediction of substance use in the non-addictive range. For that reason, only one additional investigation will be discussed as supportive of the conclusions drawn from the table. This particular investigation is noteworthy in that it was done with a large military sample, in contrast to the student samples that dominate Table 5.2. Briefly, Bucky, Edwards, and Thomas (1974) administered a self-report questionnaire that included items pertaining to drug use to over 2000 Navy enlisted men in basic training. Correlations with the drug use criterion were reported for single items, rather than for scales, which is why these results are not included in Tables 5.2 or 5.3. The single most valid item was history of truancy ( $r = .39$ ). Other life history indicators that were significantly predictive of drug use included arrests ( $r = .26$ ), school expulsions ( $r = .24$ ), and stealing ( $r = .17$ ). These findings provide further support for the relationship between the tendency to engage in substance use and such personality characteristics as antisocial disposition or dependability.

Summary. The discussion in this section of correlates of substance use has been shorter than that of the previous section on the correlates of addiction, since the present section has relied more heavily on a tabular display of results. A secondary reason for the relative brevity of this section is that many of the conclusions that apply to addiction apply as well to substance use, and so are not reiterated in the same amount of detail. In fact, perhaps the most striking conclusion about the correlates of substance use is that they are highly similar to addiction. Antisocial disposition is the best predictor of either of these behaviors, and the direct measures of addiction such as the MAST have a similarly valid analogue in such predictors as attitude toward substance use and peer support for substance use. On the other hand, the construct Dependability, which is directed more toward the normal range, has not been widely used in studies of substance addiction, yet is a good predictor of substance use.

#### Integration and Recommendations

In this final section, similarities, differences, and conclusions from the preceding two bodies of investigation are again highlighted. One striking similarity in this comparison is that the factors that are related to substance use and abuse appear to be related fairly equally whether the substance in question is alcohol or one of many drugs. Thus, it appears that programs aimed at minimizing these problems should work at approximately the same level of appropriateness for users/abusers of either alcohol or drugs.

A number of other similarities can be observed between those classified as "users in the non-addictive range" versus those classified as "addicts". For both of these groups, self-report of actual substance use/abuse behavior has clearly and not surprisingly proven to be highly valid in non-threatening research settings. For example, the MAST alcoholism scale, a direct measure, yielded validity coefficients in excess of .90 for alcoholics, while favorable attitudes and perceived peer support toward substance use were among the best predictors in non-addicted samples. Unfortunately, these results were obtained in research settings in which the subjects had nothing to lose by responding truthfully. Such truthful responding in most organizational settings might result in loss of job or job opportunity, and is thus less likely to be obtained. Therefore, although it is interesting that direct, self-report measures seem to work well with both addicts and non-addicts, the utility of these measures may be severely limited in "real-world" applications. Their principal value appears to be in situations in which the respondents perceive it to be in their own best interest to respond honestly, or perhaps in settings in which the honesty of responses could be verified through outside information.

An alternate and less direct way in which measures related to substance use/abuse have been employed is through the collection of biographical information. Among the items that have proven valid are truancy, arrests, school expulsions, and stealing, both for addicted and non-addicted samples. Religiosity, which might also be considered as biodata, has similarly been shown to be related to use/abuse. Finally, measures of political radicalism have also yielded significant correlations, although the validities for religiosity and radicalism have only been demonstrated in the non-addictive range.

The best documented "indirect" predictor of substance use/abuse is antisocial predisposition, the concept that is measured by the MMPI Pd scale. It might also be noted that the factors mentioned in the previous paragraph are very consistent with one end or the other of antisocial predisposition. Perhaps the most striking thing about this predictor is that it works well across all levels of substance abuse and all types of samples studied. Therefore, antisocial predisposition is the most promising psychosocial correlate of use/abuse for incorporation into a personnel reliability program.

Other personality characteristics that have been shown to be related to use/abuse include Depression, Dependability, and to a lesser extent, the constructs of the MMPI Mania and Schizophrenia scales. It was mentioned earlier that one reason for the validity of Dependability as a predictor is that it includes the more specific personality characteristic of antisocial predisposition. Depression has been demonstrated to be valid mainly with addicted samples, while Mania and Schizophrenia have been validated primarily in the non-addictive range.

Finally, there is one predictor category for which validity evidence across the prediction of addictive and non-addictive substance use is

both available and contradictory. The broad dimension called Adjustment appears reliably related to addiction, but not to less extreme substance abuse. The former conclusion is supported first of all by the across-the-board elevation of the MMPI profiles of both alcoholics and drug addicts, since the entire inventory has been shown to be primarily saturated with this general adjustment factor (e.g., Block, 1965). In addition, those MMPI scales such as Depression that best distinguish substance addicts from normals are highly related to the broad Adjustment disposition, as are the MMPI alcoholism scales (MacAndrew & Geertsma, 1964).

On the other hand, an appreciable relationship between Adjustment and substance use in the non-addictive range is simply not evident. Of the fifty-one reported relationships summarized in Table 5.2, 67 percent are in the desired negative direction, but only 29 percent significantly so, and the median of twenty-four correlations is only  $-.12$ . The best explanation for this discrepancy is that high scores on measures of general maladjustment are products rather than predecessors of extreme substance abuse. This conclusion is supported quite well by the evidence that can be derived from the four predictive validity investigations summarized in Table 5.1. The concurrent validities shown in Table 5.1 for the best MMPI measures of (mal)Adjustment (Depression, Schizophrenia, alcoholism scales) are very large, but none of these scales proved able to significantly predict future alcoholism. In the three predictive validity investigations listed in Table 5.3 (Gulas & King, 1976; Jessor, 1976; Jessor & Jessor, 1975), measures of adjustment were also unable to provide useful prediction of the transition from nonuser to alcohol or marijuana user status among students. However, in all four of these tabled investigations, all measures of antisocial disposition and dependability that were included provided statistically significant and practically useful prediction of future substance abuse. Therefore, it seems safe to conclude that while extended substance abuse is related to Adjustment, (mal)Adjustment seems more a result of abuse than vice versa. Longitudinal research further supporting this conclusion has been supplied by Zuckerman et al. (1975).

To sum up these results, it appears that people who become involved in substance abuse tend to be individuals with problems of behavioral self-control, rather than those with emotional problems, as is often thought. Thus, indicators of maladjustment among abusers are usually consequences of substance abuse rather than predisposing personality characteristics. Further, the characteristics that do predict future substance use/abuse throughout the continuum are antisocial predisposition and dependability, basically indices of how well an individual is able to control his/her behavior. Measures of adjustment are of value only in concurrent prediction of extreme substance abuse. Therefore, a personnel reliability program concerned with substance abuse should place more emphasis on behavioral self-control than emotional adjustment. Adjustment should by no means be ignored in the selection and monitoring process, but particular attention should be paid to the degree of socialized self-control that present and potential employees display.

## CHAPTER 6

### BEHAVIORAL RELIABILITY

A large amount of research has been discussed in the preceding five chapters of this report. This research includes investigations of personal characteristics, the work environment, substance use/abuse, the stress process, and coping with stress. Throughout, the discussion has ultimately been aimed at learning more about the factors that influence behavioral reliability. Thus, the perspective of interactionism has been explained and applied in order to show that behavioral reliability is a function of all of these aforementioned factors in interaction with each other.

Chapters II, III, IV, and V are primarily discussions of basic, academic research, research that contributes importantly to a conceptual understanding of the issues that affect an optimal behavioral reliability program. Academic research, however, is often only a partial answer to the applied problems that are encountered in actual organizational settings. For example, many academic studies are conducted in such a way that the number of alternative explanations for the results are limited. While this contributes to confidence in the conclusions drawn, it may limit the generalizability of the study. In addition, there are often practical limitations to the implementation of academic research in applied settings. Such factors as costs, employee resistance, or lack of congruence with the organizational system can make implementation unfeasible.

For this reason, the following chapter will focus on actual applied programs and procedures that pertain to behavioral reliability. In so doing, references may be made to issues or evidence discussed previously in a more academic way. The purpose of the chapter, however, is not to decide whether academic or applied knowledge is better; rather it seeks to examine behavioral reliability programs as currently used and attempts to discover why and to what degree they are effective. It is by looking at behavioral reliability from both an academic standpoint and an applied perspective that the greatest understanding can be achieved. The following chapter is directed toward this goal.

Definition and Purpose of Behavioral Reliability. Employee reliability broadly defined includes accepting rules and regulations, making appropriate decisions under stress, cooperating with other employees, following work directives, not acting without keeping others informed of problems or mistakes, and keeping vital information confidential (Buchanan, Davis, & Dunnette, 1981). By contrast, undesirable behaviors such as substance abuse, carelessness, withdrawal, or failure to manage stress have a negative effect on the employee's ability to perform reliably. Thus, the purpose of an employee reliability program is to maximize those job behaviors that contribute to consistent and effective organizational outcomes and, perhaps more important, minimize those job behaviors that lead to inconsistent and undesirable organizational outcomes.

The need for programs that accomplish these goals is obvious, but is perhaps most important in those organizations that include what might be called "sensitive duty positions." In such positions, employees have access to information, processes, materials, equipment, or people of unusual importance. As a result, unreliable behavior on the part of employees could have potentially catastrophic effects, both for the organization and potentially society as a whole.

Historically, the federal government has been among the first to recognize the importance of behavioral reliability in these sensitive duty positions, and in taking steps to ensure such reliability. Thus, with the Hatch Act of 1939 and later Executive Orders (9835, 10450), federal personnel security programs were implemented. Currently, behavioral reliability programs exist in a range of organizations and involve an array of jobs, a selection of which will be described later in this chapter. As an example of this increased recognition of the importance of behavioral reliability, the Nuclear Regulatory Commission (NRC) is in the process of finalizing an access authorization/behavioral reliability program for individuals who work at nuclear power plants (Federal Register, 1984). The extensive planning and impressive manpower commitment of this project illustrate that behavioral reliability has become a priority for nuclear plants, and similarly for the many other organizations with sensitive duty positions.

As mentioned, the ultimate goal of behavioral reliability programs is to reduce the risk that people hired into sensitive duty positions will engage in acts that would be harmful to the organization or society. The intent is to screen out or detect those individuals who might pose a threat to important information, processes, materials, equipment, or persons. Therefore, screening or selection programs are established in order to predict personnel reliability, while monitoring programs are set up in order to observe continuing behavioral reliability. In the next section, both selection and monitoring for behavioral reliability are described in general terms. This discussion then supplies the background for the later description of specific behavioral reliability programs.

### Selection Programs

A selection program presumes that one can predict the future reliability or unreliability of an individual, acknowledging, however, that such a prediction is by nature probabilistic. Thus, an effective selection program attempts to reduce the uncertainty around the prediction by gathering as much high-quality information about the individual as possible. This information may include both current and historical data, and may be gathered in a number of ways. Our discussion of this area will be organized around two important distinctions that describe both the type of information collected and the method through which collection takes place. First, information may vary along a continuum from "signs" to "samples." Second, it may be gathered in a manner that varies from objective to subjective.

The sign versus sample distinction was first made by Goodenough (1949), and was followed up by Cronbach (1970) and Wernimont and Campbell (1968). Basically, signs are indicators of predispositions to behave in certain ways, while samples are observations of the actual, characteristic behavior of the individual. Thus, measures of personality or interests have come to be used as signs of future behavior, with the rationale that behavior is determined by these somewhat generalized predispositions. By contrast, samples might also predict future behavior, but would do so because "past behavior is the best predictor of future behavior."

The second distinction is perhaps more familiar. Information that is gathered in an objective way is obtained in exactly the same manner and with the same results regardless of who collects it. Conversely, information gathered subjectively may vary dramatically in results depending on how and by whom the information is gathered. As various selection techniques are now described, these two distinctions will be used to show the differences among various information-gathering methods and the types of information they produce.

Background investigation. Among the most commonly used selection methods that pertain to behavioral reliability is an investigation into an individual's background or previous behavior. Typically, such an investigation includes the person's school records, employment history, criminal record, references, etc. As such, the background investigation supplies information that includes samples of previous behavior rather than "signs." In addition, the information is mostly objective in nature since different investigators should obtain highly similar results.

The background investigation typically has high content validity because of the direct relationship between the information used as a predictor (previous reliable or unreliable behavior) and the domain one wishes to predict (future behavioral reliability). The validity would also be expected to be good because the predictor information is quite objective, and thus less susceptible to bias. One of the major potential problems with the background investigation is that it may not be comprehensive, resulting in a sampling of behavior that is incomplete. Also, the samples that are obtained may not be reflective of current behavior, if behavior has changed over time. Therefore, direct relevance and objectivity are the strengths of the background investigation, while its potential weaknesses may include a lack of comprehensiveness and/or currentness in the sample of behavior obtained. Another weakness of the background investigation is that the information gathered is often combined in a subjective manner. A great deal of research has shown that statistical combination of information is generally far more effective in making valid predictions (Wiggins, 1973).

Interview. Another commonly used technique in selection programs is the interview. Although an interview may not always be directed toward behavioral reliability, it can easily be used for this purpose by interpreting an applicant's responses with regard to future reliability.



Thus, an interviewer can get "sign" information about how the person might be likely to behave in the future in situations relevant to those of the question. A sample of behavior is also displayed in an interview, and the interviewee can be asked to describe previous samples of behaviors. With regard to objectivity, the interview varies depending on how it is conducted. The questions and particularly the scoring of the answers can be highly structured to contribute to greater objectivity, or purposely left open with resulting subjectivity. The interview therefore may produce both sign and sample information, and vary quite a bit along the continuum of objectivity.

Because the interview can produce information of so many different types, it is not as easy to pin down specific strengths and weaknesses. To the extent that interviews are used as signs, the validity of the information should be followed up through a criterion-related study. If the interview is to function as a sample, the adequacy of the sample should be determined in a content validity framework. A principal disadvantage to the interview is that it is susceptible to considerable distortion and bias. This is because the interview is only a limited observation, and extraneous factors easily affect the perceptions and evaluations of the interviewer. Interviews have been plagued by low inter-interviewer reliability, even when conducted by individuals skilled in interview techniques (Sundberg, 1977). This may be because interviews supply too much information to be easily integrated, resulting in less reliable and valid impressions. Interviewers may also attempt to interpret or infer beyond the interviewee's responses without the evidence needed to support their inferences. To combat these problems, structured scoring systems for interviews are highly desirable.

Cognitive tests. Many organizations make use of cognitive or intellectual ability tests in their selection system. These tests may be used as either signs or samples, depending on whether the criterion of the selection system (e.g., job performance) also contains the same elements as the cognitive test. For example, a typing test is a sample of behavior since that same behavior is included in the criterion (typing skill). A test of general intelligence is used as a sign, however, since the actual behavior on the test (answering test questions) is not part of the job criterion. Therefore, a criterion-related study is necessary to validate cognitive tests used as signs, while content validity is more appropriate for cognitive tests used as samples. Regardless of whether used as signs or samples, cognitive tests are highly objective due to their standardized format and scoring procedure in which there is only one right answer. As mentioned in Chapter 11, cognitive abilities have often been demonstrated to predict the level of performance, but non-cognitive predictors such as personality are better able to forecast the consistency of performance. As a result, the inclusion of cognitive tests in a selection system often has little impact on selection decisions with regard to reliability of performance.

Physical examination. Also a typical requirement of a selection system, the physical examination is important as a check of the individual's

general health, and whether he/she can perform the physical aspects of the job. In addition, the physical examination has come to have more relevance for behavioral reliability in recent years. A great deal of research has been and is devoted to studying such measures as respiration and heart rate, skin conductance, perspiration, brain waves, and muscle tone, and relating these measures to emotional states and abnormal behavior. This research is at present in its infancy and is not yet of practical value. A physiological technique that is of present value, however, is that of urine analysis. When used to detect the presence or prior use of drugs, a urine analysis can give important information about an applicant's tendency to use drugs in the future. The analysis cannot reveal whether an applicant has used drugs weeks or months ago, but is presently one of the most relevant physical measures for behavioral reliability.

Honesty testing. In addition to information supplied by the background investigation and interview, there are two other principal avenues for assessing an applicant's honesty. The first of these is a polygraph; the second, a paper and pencil inventory that deals with an individual's prior behavior and attitudes concerning honesty. The polygraph, which at one point was fairly popular, has now fallen into disrepute and is legally prohibited as part of employment screening in nineteen states (Sackett & Harris, 1984). Lykken (1981), among others, has pointed out a number of significant problems with the polygraph, and concludes that polygraphs should not be used in any important decision-making.

Partly as an alternative to the polygraph, honesty testing has increased in popularity to the point where it is a multimillion dollar industry that is used in at least 5000 firms (Tompson, 1981). These honesty tests or inventories ask standardized questions that are designed to elicit attitudes towards theft and assessments of one's own honesty. The information obtained is primarily a sign of whether the individual is likely to be dishonest. Thus, criterion-related evidence would be necessary in order to establish the validity of these inventories as a predictor of future honesty.

The research findings with regard to the validity of honesty tests are somewhat equivocal (Sackett & Harris, 1984). Often the studies are not published in professional journals, but are quite impressive in their support for the validity and reliability of these inventories. On the other hand, many of the studies appear to be poorly controlled, and other factors might easily have influenced the results. Therefore, with regard to validity, it remains somewhat of an open question. Obviously, many companies are convinced that the tests are working effectively in reducing dishonest behavior. Better research is needed, however, before such a conclusion can be accepted with confidence.

Psychological examination. The purpose of a psychological examination in a selection program is normally to identify those individuals who appear to have problems with emotional adjustment or behavioral self-control. Ideally, such an examination would include access to components

of several of the other selection techniques already described. For example, the psychologist might use information from the background investigation as a supplement in gaining a better understanding of the applicant. Also, a psychologist typically administers one or more psychological inventories, such as of personality or biographical experiences. This information is then brought together in order to focus an interview on those aspects of behavior that are most relevant to reliability or most troublesome for the applicant.

A psychological examination provides mostly signs of future behavior, although samples of behavior are also obtained. The psychological inventories that are administered can be either objective or subjective, depending on which are chosen. Objective inventories allow a structured response, such as true-false or multiple choice, and are scored in a standardized way. By contrast, what are known as projective tests allow the applicant great latitude in his/her responses, which are then interpreted in a fairly subjective way. Both types of inventory provide signs that must be validated in order for the inventory to have utility, and the research that has been done clearly supports the superiority of the objective methods. Projective techniques lack both reliability and validity (cf. Buros, 1978), while objective measures of personality, vocational interests and needs, and biographical data are strongly supported by the evidence in Chapter II.

In summary, selection programs aimed at behavioral reliability may include many different techniques. Because these techniques yield information that varies from signs to samples, the kind of evidence necessary to support their use will differ accordingly. Sign information can be validated through criterion-related studies, while samples have value to the extent that they fit content validity requirements. Selection techniques may also be differentiated along the objectivity/subjectivity continuum. Objective information is much less susceptible to error than subjective, although subjective information may yield a more holistic picture. Since all of the selection techniques available have these differing strengths and weaknesses, it seems wise to use them in combination. By doing so, the liabilities of any one technique are compensated for by the strengths of other methods. Finally, an extremely important consideration for all of these techniques is the way in which the information is combined to produce predictions. Purely subjective, or "clinical," combination of data has been repeatedly shown to be inferior to mechanical or statistical combination (Wiggins, 1973). Therefore, each of these techniques should be seen as information-gathering tools rather than information-combining methods. The results of each should be entered into a statistical formula to produce the best possible prediction of future reliability.

#### Monitoring Programs

Earlier, it was mentioned that selection programs have historically been a commonly used method to reduce the risk of behavioral unreliability, especially in sensitive duty positions. Essentially these selection

programs provide an indirect method of predicting behavior on the job, since they make their predictions based on either personal characteristics (signs) or previous behavior (samples). For example, a past mental illness, an anti-social disposition, criminal behavior, or depression could each indicate that an individual is not reliable and thus should not be selected. Such a conclusion would be proper as long as each of these predictors was correctly validated. The problem, however, is that prediction is never perfect and there will be individuals selected who will become unreliable once on the job. One of the two major reasons for this lack of perfect prediction is the situational inadequacy inherent in any selection system.

It is an old and familiar maxim that the best prediction of future behavior can be made from information about how the individual behaved most recently in an identical situation or context. Typically, that information is not available and thus not a part of a selection program. In other words, the individual has not yet been in a particular sensitive duty position, and prediction of his/her behavior is based on a somewhat different context. One possible way to improve selection programs is to augment their content validity by including actual job simulations and recording and evaluating the individual's behavior. As an example, candidates for security guard positions might be trained to do a pat-down search and then asked to perform the search several times under varying degrees of stress induced by an "employee" who objects to being searched. By observing the candidate under these conditions, one would have a better predictor of his/her ability to cope with interpersonal stress (Buchanan, Davis, & Dunnette, 1981).

The second major reason for less than perfect prediction in selection is simply behavioral change over time. Unanticipated stresses such as divorce, economic change, or health problems cannot be predicted in advance, and may easily result in changes in performance. Also, an individual's behavior may change because of maturation or life stages, as is sometimes witnessed in a "midlife crisis." This fact of unavoidable behavioral change has prompted some organizations to periodically update their employee's background investigations in hopes of discovering any evidence that might suggest an individual is becoming unreliable. Other organizations have instead or additionally implemented observation procedures for detecting job-related behavioral change on a day-to-day basis. These procedures are known as behavioral reliability monitoring.

Thus, in contrast to selection programs, behavioral monitoring programs have been developed to provide a continuous and dynamic source of reliability information. These programs, rather than aiming to predict behavior, aim to detect behaviors or behavioral change within the framework of the work environment. If behavioral change can be detected before job performance deteriorates substantially, serious consequences can be avoided. The basic elements of such a monitoring program require a person (generally a supervisor, plant manager, or commanding officer) to observe subordinates for signs of unreliability, poor judgment,

behavior change, or inability to cope with job stress or other employees. Supervisors may be required to make periodic reports about individuals or may simply be requested to "report anything unusual" in either the behavior or circumstances of an individual (Buchanan, Davis, & Dunnette, 1981). This information can then be used by a personnel reliability coordinator to determine if further action is appropriate.

One commonly employed industrial procedure that uses behavior observation or monitoring is performance appraisal. Typically, once a year a supervisor rates the job performance behavior of his/her employee, discusses the findings with the employee, files a report in the individual's personnel file, and uses the evaluation to determine raises, training, promotions, demotions, transfers, or terminations. In short, behavior observation in this format is traditional and accepted (Buchanan, Davis, & Dunnette, 1981).

Unfortunately, there are a number of drawbacks to the use of normal performance appraisal alone in detecting behavioral unreliability. First, performance appraisals are oftentimes done only yearly, a period of time long enough that an individual's behavior could change dramatically without appropriate action. Second, performance appraisal is associated with promotion and salary increases, and can become highly politicized. Behavioral reliability monitoring has this potential as well, but is different in purpose and could easily be misinterpreted if placed in a performance appraisal framework. Third, the research on performance appraisal shows that there is typically very little variance among employees in the ratings they receive, so it would be difficult to identify anyone with a reliability problem. Finally, performance appraisal is typically based on either traits or job dimensions that often do not coincide with the target behaviors of a reliability program. For all of these reasons, a monitoring program separate from that of performance appraisal appears necessary.

A second type of program that includes behavior observation on-the-job is often referred to as an employee assistance program. Such programs, which have now become fairly widespread, are designed to provide help for employees who are under unusual stress, experiencing emotional or family problems, or involved in substance abuse. Supervisors who have observed behaviors related to these problems can refer an individual to a professional for evaluation and counseling, or the employee can initiate action him/herself. Thus, as a result of monitoring by the supervisor or self-monitoring by the employee, a potentially damaging situation can be defused. Again, however, the focus of an employee assistance program is somewhat different from that of a behavioral reliability program, since employee assistance emphasizes interventions while reliability emphasizes detection. The two may overlap substantially, but in monitoring the focus is on identification of unreliable employees rather than on what to do following identification.

Target behaviors. An essential step in establishing a behavior reliability program is specification of the target behaviors that are considered to be inappropriate or unreliable in a particular work setting. These behavioral criteria are needed for three separate purposes in a personnel reliability program. First, a delineation of the target behaviors is very helpful in establishing a pre-employment selection program, since it suggests the types of predictors that are most relevant for selection and also how the resulting information might be best evaluated. Second, supervisors need these criteria in order to focus and structure the way they observe behavior in the work setting. Third, a listing of the target behaviors is helpful to professionals in the behavioral sciences when evaluating and counseling referred, troubled employees.

For all of the reasons mentioned above, it is critical that there be consistency among these professionals and supervisors as to which behaviors do or do not represent unreliability. Therefore, not only must the target behaviors be specified, they must also be grouped in such a way that the listing is comprehensive, non-redundant, specific, and clear to those who must use it. In the absence of such a grouping, agreement among those involved in the program (inter-rater reliability) will be so low that the program will be of little value. The following is one of the few rigorous attempts to arrive at such a grouping of behaviors that addresses the reliability/emotional stability domain.

Dunnette, Bownas, and Bosshardt (1981), in a project for Edison Electric Institute, undertook a study of power plant operator positions, positions typically considered to be of a "sensitive duty" nature. One objective of the study was to identify the set of behaviors displayed by nuclear power plant operators that are considered to indicate unreliability or emotional instability. The project attempted to define aberrant or unreliable behavior through collecting actual, on-the-job, incidents of employee reliability. These incidents, which are usually called critical incidents (Flanagan, 1954), are examples of behaviors at work that represent various levels of effectiveness. In the Dunnette et al. (1981) study, these incidents were collected in a series of workshops at the nuclear plants, and conceptually clustered into eighteen dimensions of "nuclear plant personnel emotional stability." Next, additional workshops were held in which supervisors were asked to think of four employees who had behaved unreliably, and to rate each employee on the eighteen dimensions (using a single common rating scale). Finally, correlations were computed among dimensions and the correlations were subjected to a factor analysis; a five factor solution was obtained.

The five factors obtained in the Dunnette et al. (1981) study represent five major criteria of emotional stability/behavioral reliability. They were entitled:

1. Argumentative Hostility Toward Authority
2. Irresponsibility and Impulsivity
3. Defensive Incompetence
4. Psychopathology
5. Reaction to Accumulated Stress

Table 6.1 shows the behaviors and behavior patterns for each of the factors/criteria.

These factors represent a unique step forward in the definition of the construct of emotional instability and behavioral unreliability. The behaviors, the dimensions, and ultimately the factors have as their basis actual incidents of employee unreliability. In addition, the incidents gathered involved a wide range of jobs such as operating personnel, guards, technicians, engineers, and others. Thus, although these factors have been obtained from only one study, they are firmly grounded in behavior and likely to be of considerable generalizability. Also, the factors make sense conceptually, and fit well with the literature and practical experience in this area. They appear, therefore, to provide a useful structure for future work in behavioral reliability, and are very conducive to effective selection, monitoring, and intervention within the scope of such a program.

Intervention. Intervention takes place when a monitoring program has identified an individual as a possible risk (or actual danger) for unreliable behavior. At that juncture, the organization has several alternatives, depending in part on the situation. The individual could be fired, placed on some type of restriction, disciplined, or referred for professional help. Largely, this is an individualized decision that must take into account factors such as the behavior in question, the sensitivity of the job, the individual's prior record, and the organization's policies. In general, however, it is very important to include an avenue for input from the individual, and an appeal process if he/she feels the intervention is inappropriate. Also, if the intervention process is seen as punitive, it can easily undermine the effectiveness of the overall program through lack of employee and supervisory cooperation.

Summary. Employee behavioral reliability broadly defined includes accepting rules and regulations, making appropriate decisions under stress, cooperating with other employees, following work directives, not acting without keeping others informed of problems or mistakes, and keeping vital information confidential. Thus, behavioral reliability covers a wide range of activities and is an area that is dynamic and ongoing. Because of these qualities and also the importance of reliability in sensitive duty positions, programs have been developed that apply to the area in different ways. Selection programs, which include interviews, honesty testing, background investigations, and various types of psychological assessment, attempt to predict those at risk for unreliability and eliminate them from consideration. These selection techniques vary from signs to samples and from objective to subjective, and require different validation strategies. Monitoring programs focus on detection of on-the-job behaviors that are currently unreliable or may lead to unreliability. Monitoring is therefore better able to take into account behavioral change, and may lend itself to suggestions for effective employee interventions.

Table 6.1. Criteria of behavioral unreliability.  
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1. Argumentative Hostility Toward Authority

This major factor includes such behaviors and behavior patterns as:

- . Exhibits fits of temper, argues or fights with others, screams or swears when questioned.
- . Refuses to take orders, challenges supervisor's authority, shows arrogance, is extremely critical toward the company.
- . Refuses to comply with established procedures and safety precautions, bends rules.
- . Overreacts to real or imagined criticism.
- . Displays rigidity or inflexibility, becomes agitated if work routines are interfered with.
- . Attempts to perform all operating activities alone.
- . Refuses to accept help from others.

2. Irresponsibility

This major factor includes such behaviors and behavior patterns as:

- . Takes action without thinking.
- . Shows questionable judgment on the spur of the moment.
- . Plays frequent pranks.
- . Shows little concern for disciplinary threats, laughs off errors or reprimands.
- . Is often tardy or absent.
- . Denies mistakes.
- . Operates equipment carelessly.
- . Is frequently sloppy or fails to complete work.
- . Ignores time limits or procedures.
- . Creates excitement when bored on the job.



Table 6.1. Criteria of behavioral unreliability. (Continued)

- 
- . Engages in theft or sabotage, lies or cheats, commits acts of vandalism.
  - . Provides incorrect or inaccurate information when questioned.
  - . Refuses to offer expertise to others, tries to establish self as "expert" by withholding operating information from others.
  - . Sleeps on the job.
  - . Displays a low boredom tolerance that results in a lack of vigilance.

3. Defensive Incompetence

This major factor includes such behaviors and behavior patterns as:

- . Refuses to enter contaminated areas when appropriate to enter.
- . Worries excessively about radiation overexposure.
- . Covers up mistakes to conceal lack of system comprehension.
- . Displays excessive timidity on the job.
- . Fails to inform others of relevant information.
- . Is reluctant to act without direct orders or explicit instructions.

4. Reaction to Stress

This major factor includes such behaviors and behavior patterns as:

- . Responds inappropriately to critical or emergency situations, becomes indecisive or incapacitated, disappears from the work scene when faced with a crisis.
- . Startles or cries easily.
- . Loses the ability to discriminate the problem and the action needed, treats normal situations as crises, freezes, becomes indecisive or incapacitated, forgets important or obvious things.
- . Shows deteriorating performance.

Table 6.1. Criteria of behavioral unreliability. (Continued)

- 
- . Displays unusual physical signs of nervousness such as sweating, tremors, hesitation.
  - . Complains excessively about pressures outside of work such as family or finances.
  - . Abuses or is dependent upon chemicals, alcohol, or other drugs.

5. Emotional and Personal Adaptability

This major factor includes such behaviors and behavior patterns as:

- . Displays recurrent mood swings from extreme euphoria to extreme depression.
  - . Chronic fatigue, insomnia, or appetite changes.
  - . Extreme suspiciousness.
  - . Demonstrates an excessive need for approval or hesitates to act without direct instructions.
  - . Tends toward social isolation or withdrawal.
  - . Displays a lack of attention to personal appearance.
  - . Is reluctant or refuses to work as a member of a team.
  - . Appears disoriented, has a loss of memory, or shows a marked decline in intellectual functioning.
  - . Displays a delayed reaction time.
  - . Shows no emotion at all.
  - . Has an inability to perform job tasks as a result of medical or physical symptoms.
  - . Sees or hears things that do not exist.
  - . Makes suicidal threats.
  - . Has difficulty comprehending or responding to questions, jumps from topic to topic in speech.
-

One of the most important considerations for a behavioral reliability program is a specification of the job's target behaviors, or those behaviors that are inappropriate or dangerous in the particular work setting. The reason these behaviors are so important is that they are the basis for the criteria used in screening, monitoring, and intervention decisions. In other words, virtually all decisions made in the context of employee reliability ultimately refer to a description of what does and does not constitute unreliable behavior. As an illustration, work with nuclear power plant operators was described to show how these target behaviors can be collected, analyzed, and grouped for use in reliability decision-making. The five criteria of behavioral reliability that resulted from that study appear to have wide generalizability, and form a useful conceptual structure for future work in the area.

#### Current Behavioral Reliability Programs

The preceding section of this chapter described in general terms the various aspects of a generic behavioral reliability program. In this section, specific programs are discussed that were investigated during a series of site visits conducted as part of this project. These site visits thus afford a look at a number of actual, in-place, reliability programs that apply to a range of sensitive duty positions. The site visits were conducted with the following agencies or organizations: 1) Federal Bureau of Investigation, 2) Los Angeles County Sheriff's Department, 3) Los Angeles City Police Department, 4) Washington, D.C. Metropolitan Transit Police Department, 5) U. S. Marine Corps Embassy Security Guard Battalion, 6) Olympics Security Headquarters, 7) Northern States Power Company, and 8) Wisconsin Electric Power Company.

These particular agencies were chosen by Mike Symonds of the Defense Nuclear Agency and PDRI staff, and represent a wide range of viewpoints, jobs, locations, and working conditions. In addition, persons in sensitive duty positions across these agencies differ in both the degree of sensitivity of their jobs and the reason for that sensitivity, thereby further increasing the generality of the findings. At each agency, the site visit consisted of an interview session or sessions with the individuals who were most familiar with the actual, day-to-day, behavioral reliability program. Thus, the persons interviewed were selected to be interviewed on the basis of their intimate knowledge of the workings of the program, rather than their title or position. Interviewees therefore included administrators, psychologists, managers, and training and personnel specialists. The interviews ranged in length from two to five hours, and included one to three interviewees per session. All interviews were conducted by Dr. Leaetta Hough, along with Mike Symonds, Bill Witter, Meg Keyes, or Bruce Barge.

In the following section, the principal findings of the site visits for each agency are reviewed. The discussion of these findings is often divided into two sections, 1) selection and 2) monitoring, in line with the earlier description of these two major elements in behavior reliability

programs. Also, a variety of supporting material from the site visit interviews is available in Appendix A and may be consulted for additional information.

Federal Bureau of Investigation (FBI). The site visit with the FBI took place at the FBI Academy in Quantico, Virginia in June 1984. The information is divided into two sections, one that deals with selection and one that concerns monitoring. In regard to selection (or screening), the FBI annually chooses approximately 450 new hires from a group of 6,000 to 10,000 applicants. Candidates are required to meet three initial criteria in order to receive further consideration. They must have a bachelor's degree, be between ages 23 and 35 and must qualify by passing a knowledge test in one of these five areas:

- . science,
- . law,
- . accounting,
- . language, or
- . modified four-year degree and experience.

Although a person qualifies in one of the above areas, he/she may not necessarily be selected in that area.

The FBI also uses two additional tests in their selection decisions. One is an attitude inventory called the Special Agent Entrance Test, which was developed by the FBI. It is based on a job analysis of agent activities that found that seven personal characteristics were important to the job. They are: oral communication; motivation/commitment; impact; initiative; work standards; independence; and range of interests. The second test, called the Cognitive Functions Test, is also based on the seven personal characteristics, and is composed of tests developed earlier by Psychological Corporation.

The tests are used to identify the top ten candidates for each field office, and these ten are then interviewed by a board of three people. Overall, the weighting of the interview, Cognitive Functions and Special Agent Entrance Test (the attitude questionnaire) are 55 points, 25 points, and 20 points respectively.

Another part of the selection process is a medical exam. A medical doctor certifies that the person is capable of strenuous physical activity and that he/she also meets the vision requirement. Both eyes have to be correctable to 20/20; in addition, one uncorrected eye can be no worse than 20/200, the other eye no worse than 20/100. There have been some exceptions to the vision requirement.

At the field office, a preemployment physical fitness exam is also given. It consists of a 1.5 mile walk/run, push-ups, sit-ups, and body fitness. On a scale of 1-5 with 5 the best, one has to attain a 2 in each of the four categories. The FBI doesn't disqualify people on this basis, but won't schedule training until candidates do score a 2 in each category. Once in training, those people with a total score of 10 or less are automatically placed on a remedial program.

The most important step in the selection process from a personnel reliability perspective is the background investigation and interview. Like the age, education, and physical requirements and the qualifying exam, the background check is used strictly to screen out applicants. Anything derogatory found in a candidate's background is seen as sufficient to eliminate the person from consideration. The background investigation and interview concentrate on finding evidence of:

- . a criminal record,
- . a negative CIA check,
- . unreported travel abroad,
- . unaccounted for periods of time,
- . any pattern of trouble,
- . negative information about behavior at educational institutions,
- . lack of sincerity,
- . negative opinions of neighbors,
- . negative opinions of references and others who were not listed as references, and
- . anything else that would disqualify the candidate from obtaining a security clearance.

Throughout the selection process, the FBI is looking for people who:

- . are self-starters,
- . have initiative,
- . set their own work standards at a sufficiently high level,
- . have interpersonal ability/presence (for interviewing),
- . have a wide range of interests,
- . are versatile,
- . are tolerant of other approaches or life styles,
- . are persuasive (need to obtain information from people who are not necessarily interested in providing or revealing the information),
- . have good/accurate memories (need to recall and write down information obtained in such encounters), and
- . are sincere.

Monitoring. A valuable way of improving the likelihood that new FBI agents will perform reliably in the field is to monitor their performance during training. Training has obvious relevance to future job activities and in addition is often a stressful period; therefore, it provides very useful information about how an agent is likely to function in future, stressful job situations. In the FBI, monitoring during training represents an important part of the behavioral reliability program, and is conducted with regard to three main areas: physical fitness, training course grades, and demeanor.

With regard to physical fitness, an early requirement is that the trainee be able to pull the trigger of a standard issue revolver a minimum of 40 times in 30 seconds. This requirement is necessary because a person who cannot do the trigger pull that quickly will likely not be able to pass the firearms test that is held later in training. Since this trigger pull requirement was instituted, the firearms test passing rates of men

and women are more nearly equal, whereas before women failed at a disproportionately high rate.

Another part of the physical fitness test consists of a two-mile run, shuttle run, push-ups, pull-ups, and sit-ups. There are different scales for men and women. The FBI uses the entry-level score to predict an individual's approximate score at six weeks into training. They then administer the five-part physical fitness test again at six weeks to evaluate an individual's progress and to predict an individual's approximate score at twelve weeks. Candidates must attain a minimum standard of at least one positive score in each category, and a minimum of 15 total points. (Scores range from -5 to +10 in each category.) This is not a difficult standard and is less stringent than was applied before. This revision in standards is because the job analysis did not indicate that physical fitness was directly job related; therefore, a more discretionary approach is now applied. A person who does score below standard, however, is either placed on remedial training or asked to appear before a review board.

A review board is set up to identify what problems a candidate has that are interfering with his/her progress in training. The review can apply not only to physical fitness standards, but to course grades or demeanor as well. In physical fitness, failure to attain the individual's predicted score range may indicate lack of motivation or poor work standards. The review board is designed to help candidates realize their weaknesses and take steps to correct them.

The second facet of training in which monitoring occurs relates to minimum course grades. One must attain an 85 or above to pass a test and candidates must pass all tests. Previously, if a person received less than 85 on two tests, they were asked to resign. Now, the FBI has a gray area, scores of 80-85. If someone receives two scores in this range, they go before the review board. (Two scores below 80 and the candidate is immediately asked to resign.) Again, the review board tries to identify what the problem is and develop an approach for overcoming the problem. Candidates still must obtain 85 or better on all tests (they have to retake a test if they get less than 85). The review board process has had a significant impact on the retention of minority applicants. Data from before and after implementation of the review board show that blacks are now completing training in higher percentages than before.

The third aspect of monitoring during training concerns the candidate's demeanor. If FBI training staff have reservations about an individual's future reliability and can document the case, a review board is convened.

The review board process was introduced in 1980. It consists of three officials (plus the personnel reliability coordinator who sits in) who meet to resolve any candidate training problems. As mentioned, their objective is to help candidates complete training without lowering the quality of FBI agents. They obtain information from instructors, counselors,

and the individual and then design remedial programs tailored to the individual. If the individual does not show improvement, he or she is asked to resign. Other recommendations may include a) staying in the program longer, and b) recycling the individual through another training class. Sometimes personal difficulties (death, etc.) with one's family justify recycling the individual through another program. The review board documents the case and writes a summary. The board's recommendations are always reviewed by the FBI Assistant Director who has the final decision.

Once training is completed, each new agent works side-by-side with a field training agent for 20 work-days. This field training agent evaluates the individual and at the end of the 20 work-days makes a recommendation about whether the individual can work alone. Compared to the previous system, the present FBI system is much more supportive of the individual both during training and once on the job. In addition to the physical fitness testing approach, the marginal failure range for course test scores, the individualized remedial programs, and the review board, the FBI now has "field counselors" in the dorms to deal with personal problems during training, a psychological services program for agents, and, most recently, a structured procedure between supervisor and undercover agent to ensure good psychological health/stability during and after the period of undercover work.

The psychological services program is composed primarily of a psychiatrist who provides counseling, therapy, and referrals to a psychiatrist or therapist in the agent's geographic area. The psychiatrist and a colleague also do family counseling. This program is voluntary, the individual agent seeks out the service. The agent's supervisor, however, can recommend that such help be obtained.

Another program the FBI has is for agents involved in undercover work, called "Safeguarding the Psychological Health of Undercover Agents." It consists of a minimum of four interviews between supervisor and undercover agent. The first interview is the "Preliminary Interview for Undercover Assignment," the second (and perhaps additional ones) is "Six Months' Interview for Undercover Project," the third is "Debriefing Interview for Undercover Project," and the fourth is "Follow-up Interview for Undercover Project." This set of interviews recognizes the importance to both the organization and the individual of the agent's psychological health/stability. It is an effort to make the agents more "reliable" in both the short and long term. (Appendix A contains copies of the four interview formats which were designed by Howard Teten of the FBI.) This program has been well received because the agents and FBI management both recognized the need for ensuring reliable agents before, during, and after undercover work.

In addition to these formal programs for behavioral reliability, there is also the normal performance appraisal system. Unfortunately, the performance ratings show little or no variance - 95% of agents receive

excellent, 4% receive outstanding, and 1% receive average ratings. In the context of performance appraisal, however, the "reliability" of an agent's behavior is monitored by supervisors. If there is a problem, they generally will take care of it on an informal basis through work assignment to something less sensitive. They will recommend AA, the psychological services program, etc. They also can place the agent on limited duty, take away his/her gun, and/or strongly curtail his/her assignments.

Los Angeles County Sheriff's Department. The site visit to the L. A. County Sheriff's Department took place in Los Angeles in July 1984. As with the FBI, the Sheriff's Department experiences a very favorable selection ratio, hiring only 5% or 700 of the approximately 14,000 yearly applicants. Also, the selection procedure is fairly similar to that of the FBI, since it includes a series of hurdles to be met by each candidate. Thus, in order to be considered, a candidate must first be over age 21, have a high school diploma or GED, and have a valid driver's license. Assuming the candidate meets these criteria, he/she is scheduled for a written examination. The written exam measures reading skills, writing skills, and reasoning ability. Last year, of the group who showed up for the written exam, 64%, or 5508 people, passed the exam.

The candidates who pass the written exam are scheduled for a Physical Agility Test (PAT) which consists of running, dragging a body, and simulating handcuffing a person (forcing two bars together, requires 60 pounds force). Sixty-three percent of the applicants pass this test, but only 20% of the women as compared to 76% of the men. As a result, approximately 50% of both men and women that fail the PAT are scheduled for remedial training, through which women are able to improve their relative passing rate. Those that pass are then scheduled for the next step, the oral interview.

The oral interview determines one's ranking on the eligibility list. It is an evaluation of each candidate's motivation, overall fitness for the job, and understanding of the job. Two deputies, who are randomly selected from the ranks of deputy or sergeant, sit on the board. They ask three hypothetical questions from a set of six or seven and also go through the candidate's resume and past job experiences. The maximum score possible for a candidate is 100; passing is 70.

Assuming that a candidate has made it through the process this far, a medical exam is conducted and a background investigation is undertaken. Each applicant completes a fifteen-page questionnaire, called the pre-polygraph questionnaire. There can be no omissions and no falsifications. If there are, the person is disqualified. The threat of a polygraph is, apparently, enough to cause many people to withdraw their application. The background investigator receives the candidate's file and checks the financial or credit history, school records, employment history, home life, criminal history, drug history (can't have used



marijuana in the last year, can't have ever used hallucinatory drugs), driving record (three tickets in one year is a disqualifier), etc. The background investigation focuses primarily on gathering information about the applicant's moral character, stability, and responsibility. At this point, the investigator can request that the applicant have a psychological exam and/or a polygraph. The psychological exam consists of an MMPI and an in-depth interview with a psychologist.

Basically, the psychological examination is designed to learn more about those candidates about whom the background investigator is uncertain. According to the psychologist interviewed, many of these individuals have a rather rigid view of the world, and tend to see it in black and white terms or good versus evil. The fear is that such an individual may over-react to many situations. Thus, the psychologist uses the MMPI and interview to probe those areas that may be related to future unreliability. In addition to or instead of a psychological exam, the background investigator may also request a polygraph. Finally, the investigator writes up a summary of the findings from the background investigation and makes a recommendation. As with the written exam and the physical, the background investigation is used only to select out or eliminate candidates from further consideration.

The final selection decision is made by the Captain of the Personnel Bureau. In general, the characteristics the Los Angeles Sheriff's Department is looking for in deputy sheriffs are:

- . common sense,
- . maturity,
- . personality,
- . attitude,
- . motivation,
- . independent judgment,
- . interpersonal skills,
- . writing ability, and
- . physical fitness.

The L. A. County Sheriff's Department now does realistic job previews describing training, custody assignment, and black-and-white patrol assignment. Since this program was introduced, there is less turnover. The L. A. County Sheriff's Department also considers their training academy to be part of the selection procedure. In effect, they set up a very demanding job environment for eighteen weeks and assess who can and cannot "cut it." The academy is a combination junior college and boot camp and is characterized an extremely structured situation. It includes physical fitness/exercise, role-playing, simulations (such as death notification, search, pull-over and approach, officer-involved shootings), ride-alongs, combat training, training with arms, officer survival safety, Spanish classes, deafness awareness classes, gay awareness classes, cultural exchange, courtroom demeanor, etc. The qualities that are emphasized and sought in cadets and officers are proper attitude (willing and hard worker), conduct, motivation, self-discipline, team

work, physical fitness, and compassion. Of those people who do not complete training, most are lost during the first eight weeks. It is felt that most are lost for "attitude" reasons, i.e., the cadet is overwhelmed by the discipline, doesn't want that kind of discipline, or is unwilling to make the sacrifice.

The site visit interviewees said that the department does not artificially induce stress into the academy. There is no intimidation, no attempt to "break a person." In fact, they try to accommodate the cadets' needs. They are human relations oriented and flexible in their approach to problems encountered during training. In addition to the training component, the academy is considered a part of the screening process and is used to identify persons not fit for police work. Such people were characterized as lacking maturity, common sense, motivation, and the proper personality or attitude. The full range of conduct and performance at the academy is evaluated, critiqued, and discussed with each individual. The cadets are also evaluated by staff who observe the cadets' reactions in the role playing exercises and simulations. Examples of cadet actions that are unacceptable are: a) won't defend oneself, b) overuses a weapon (i.e., has a gun drawn in inappropriate situations), c) is a bully, or d) freezes. The cadets also evaluate each other (peer evaluations). These are not used to eliminate people, but if negative information from peers corroborates the staff's opinion, they will use the information to remove the person from the training program. Peer evaluations are done twice, at six and twelve weeks into training.

Late in the training program, a family orientation night is held. Family members meet the staff, talk to the platoon leader one-on-one, and learn about what the job of a sheriff's deputy is all about. Also, when the eighteen weeks of training are complete, there is a celebration which includes spouses.

Monitoring. The L. A. County Sheriff's Department has no formal behavioral reliability, monitoring program in place. There are, however, a number of policies that relate to behavioral reliability. First, formal performance evaluation is done on a yearly basis. The Department uses the standard county performance form that is used for most county employees. After the performance discussion with the supervisor, the officer reads and signs the form. Also, the department has standards against which officers are assessed with regard to misconduct or poor judgment, particularly if the officer is involved in a questionable incident such as a shooting. Officers cannot be fired from their jobs for either possession of marijuana or drunken driving. They are fired, however, if convicted of a felony or of possession of heroin or cocaine.

Several other programs also relate to behavioral reliability. One of these is designed to combat the monotony that young officers experience when assigned to guard duty at the jail during their first one or two years with the department. Since most of the officers are action-oriented and adventurous types who dislike guard duty, the department

has initiated a training program for these people to help their morale. The training is characterized as high profile, active, adventure type skill training. It includes such things as pull-over and approach, search, officer-involved shootings, etc. The resulting reduction in monotony has reduced turnover, and may have improved day-to-day performance as well.

Finally, the Sheriff's Department also provides an agency at which officers or family members who are having personal or professional problems may come for counseling. Over half of the department has made use of the services of this agency, which is physically located several blocks away from any other Sheriff's Department office or facility to increase confidentiality. According to the psychologist interviewed, the primary reason people come to the counseling agency is for relationship problems. Some of these are job-related; officers may forget how to relate to people other than in an authoritarian manner. Also, some workshifts (e.g., the graveyard) are especially disruptive to family life. Another major problem is that working twelve to fourteen hour days in order to get the paperwork done, then going to court the next day, is very tiring and hard on one's family and personal life. Basically, the counseling agency helps to identify these sources of adjustment problems, and aids the officer or his/her family in finding solutions.

Los Angeles Police Department (LAPD). Interviews were conducted in Los Angeles in July 1984 with persons affiliated with the LAPD. The following are minimum entrance requirements for LAPD police officers:

1. age - 21 years;
2. education - high school diploma or GED equivalent;
3. citizenship - U.S.A. citizenship as soon as possible; must submit proof of U.S.A. citizenship application;
4. vision - uncorrected at least 20/40 using both eyes, with at least 20/70 in the poorer eye and at least 20/40 in the better eye; correctable to 20/30; normal depth perception and satisfactory color vision required;
5. height/weight - at least 5' 0", not more than 6' 8"; weight appropriate for height and build;
6. health - excellent with no conditions which would restrict ability to safely do police work; and
7. background - no felony convictions.

If the applicant meets these criteria, he/she may take the qualifying written test which measures reading comprehension, English usage (including spelling and vocabulary), reasoning, and ability to make common sense judgments on practical problems. This requirement may also be waived if the person has: a) completed, with a "C" average or better, 60 college semester units or 90 college quarter units; b) been employed by the city for three or more months; or c) been full-time in law enforcement for the past year and has a California Peace Officer Standards and Training Certificate. The test is used only as a disqualifier. If a person passes, his or her score on this test has no impact on the ranking of candidates.

Very few people are disqualified by the written exam, and the test may be taken once every three months. Each person who passes the written exam is scheduled for an interview. At this point, however, and throughout the selection process, there is quite a bit of self-selecting out. In other words, many of those who pass one phase do not show up for the next one. If a candidate does continue the process, he/she next participates in an interview, which can also be taken once every three months.

In the interview, a candidate is evaluated with regard to employment history, education, ability to relate to others, reasoning and problem-solving ability in answering situation questions, and communication skills. The interview panel usually consists of three people: a police sergeant or detective, a person from the personnel department (city), and a person from the community. It is about a 20-30 minute interview that is highly structured. Two of the questions consist of police situational judgment items. The interviewers independently rate the applicant on four dimensions: 1) employment and education history, 2) interpersonal skills, 3) reasoning and problem solving, and 4) oral communication skills. In order to pass, a candidate must obtain a score of 70 or higher out of a possible 100. This score also determines the candidate's rank.

The final portion of the selection procedure includes four evaluations that serve only to disqualify or screen out ill-suited applicants. The first of these is the physical abilities test, which is designed to measure physical endurance, strength, and agility. If failed, this test may be retaken as many times as desired. The second evaluation is medical, and requires that the candidate be in excellent health with no conditions that would restrict his/her ability to do police work safely. The candidate cannot exceed a given level of body fat, and may be required to take a cardiac stress test on a treadmill.

The third evaluation that may disqualify a candidate is the background investigation. This includes an interview and a thorough check of police records; personal, military, and employment histories; and inquiry of persons who know the applicant. The purpose of these inquiries is to evaluate whether the applicant: 1) respects the law, 2) is honest, 3) has mature judgment, 4) respects the rights of others, 5) has a good employment record, 6) has a good military record, 7) has a responsible financial record, and 8) has a good driving record. The LAPD also has specific "conduct guidelines" that the background investigators use in evaluating candidates on these dimensions. The guidelines contain specific examples of what the background investigator should look for and are included in Appendix A. In addition to these guidelines, any single use of hard narcotics is disqualifying. The candidate is also disqualified if he/she has smoked marijuana more than 100 times. If there is evidence the person is not telling the truth, a polygraph may be given.

Finally, the fourth source of potential disqualification is the psychological evaluation. This is done by a city-employed psychologist. The MMPI is administered and interpreted by the psychologist, along with an interview. According to one source, the rate of disqualifications is based on who the psychologist is. Previously, approximately 70% of those interviewed were disqualified by the psychologist; currently about 17% are disqualified as a result of the psychological evaluation.

In addition to the normal selection system for LAPD, another factor is currently influencing the hiring of officers. LAPD is presently operating under a consent decree which dictates that more women must be hired until the department is at least 25% female. For racial minorities such as blacks and Hispanics, there are hiring goals rather than a mandated percent.

The research that has been done at the LAPD has shown that the success rate on the street is the same for men and women and for all combinations of partners: female/female, male/female, and male/male. They have also found that there is no correlation between shooting scores at the academy and success on the street, nor is there a relationship between physical prowess and success on the street. There is a correlation between academic achievement or mental ability and success on the street.

Monitoring. The LAPD academy will be considered a part of monitoring. Like the Sheriff's Department training, the academy is very military, very regimented, and much like boot camp. It trains approximately 400-500 recruits each year. The regular training at the academy is divided into four sections: 1) instructional technology section; 2) recruit training section; 3) specialized training section; and 4) organizational development section (advanced training of management techniques for sergeants, detectives, lieutenants, and higher). Classroom training, audio and video tapes, books, simulation, and role-playing techniques are among the teaching mediums used.

The training includes physical conditioning, self-defense, first aid, cardio-pulmonary resuscitation, and ordnance training. There is also a simulator which is designed to teach decision-making under stress in potential field shooting situations. It's called DEFT, "Development and Evaluation of Firearms Training," and permits an officer to view true-to-life filmed enactments of various situations. The officer reacts to them in a non-life-threatening setting, actually firing at targets on a special, curved screen that registers a score. The officer's performance is videotaped and then critiqued both by a live instructor and a computer which reports the trainee's accuracy and compliance with LAPD shooting policy. It was remarked that the DEFT may be the best part of the academy.

Another effective program at the academy is part of the aforementioned consent decree, and is designed to reduce the disparity in the attrition rates of men and women. Previously, the attrition rate from the academy

for women was 62%, for men 18%. The problem for women was a lack of both upper body strength and command presence. To meet this need, there is now a program called "Crime Prevention Assistance" in which women are employed by the city for four-five months. For six of eight hours each day the woman performs services for the department, the other two hours of the day she works out with the training staff, doing primarily weight lifting exercises. LAPD also developed a program called "POWR" or "Positive Orientation for Winning Response." This is a one-hour class and is designed to prepare women for street work. It focuses on how to control oneself in a competitive, electrifying situation; it teaches "command presence." These two programs have brought the academy attrition rate for women down to approximately that of men, and as mentioned, women perform as well on the street as do men.

When the academy training is almost complete, the spouses are invited to the academy for a one day program. This day is devoted to showing the spouses what the officers will experience. The new officer is also assigned a training officer who supervises him/her for a period of one year. Thus, a new officer is actually on probation for one and one-half years, with the first six months being the academy. During the year under the training officer, the new officer is rated every two weeks the first three months, and then monthly for the rest of the year. The LAPD loses about twelve people yearly for inability to perform to standards during this one year period. Also, the LAPD distinguishes between performance deficiencies and misconduct. During probation, an officer is terminated immediately for misconduct.

Similar to the L. A. County Sheriff's Department, the LAPD has a number of services available to help officers prevent or deal with problems that contribute to unreliable behavior. One of these is the "Early Prevention of Emotional Problems" program. It also includes teaching supervisors how to detect behavioral changes in subordinates that indicate the need for psychological services. An officer can voluntarily use the services of the psychologists. If the officer does voluntarily seek help, management never knows about it. A supervisor can not order an officer to seek counseling; however, the supervisor can order a "fitness report" on the officer. In such a situation, the psychologist prepares a fitness report for management. Part of this fitness report includes whether or not the officer is sufficiently reliable to carry a gun. About 80% come in on a confidential basis, the other 20% are ordered in. A fitness report is mandatory if the officer is involved in a shooting.

Two additional programs are also available to officers who wish to deal with emotional or personal problems. One of these is called the "PEER Counseling" program. It consists of volunteers who have experienced problems who talk with, counsel, and are supportive of an officer who has a similar problem. Examples of experiences or problems that these volunteers have had are open heart surgery, sexual abuse, and terminal cancer. This is also seen as one of the best programs the LAPD has. Another support program available is called the Chaplin Program. This is a service for people who want to discuss their problems with someone

who has had religious training and has a religious orientation.

Washington, D. C. Metropolitan Area Transit Authority Police. The site visit to the Metro Transit Police took place in Washington, D. C. in June 1984. Established to provide security and protection for people who are using the Washington, D. C. mass transit system (e.g., subway), the Transit Police carry weapons and function in a sort of middle ground between police officer and security guard. Thus, the job may be considered a sensitive duty position since it involves the protection of human life and city property, as well as involving considerable danger and stress. The range of sensitive duty, however, is far more restricted than that of the three agencies discussed previously.

In doing selection for Transit Police officers, a five-step approach is employed. First, all applicants (approximately 2500 per year) must complete an application form, which is then screened by the personnel department. The screening is to determine that the applicant has a high school diploma and driver's license, and also that the application is complete and reasonably well written. The Department Captain then examines the forms to screen out persons with criminal records or other obviously disqualifying characteristics. About half of the applicants are screened out at this stage.

The next stage involves administration of the Personal Selection Inventory (PSI) to the remaining applicants. Before beginning this stage, however, the applicants are informed that if, at any time during the selection process, they are not truthful, they will be disqualified from further consideration. With this admonition, the PSI is given and applicants respond to questions that measure four characteristics:

- a) honesty,
- b) violence,
- c) use or abuse of drugs, and
- d) honesty in answering the inventory.

Scores are totaled on these four scales and compared with cutoff scores. To receive further consideration, a candidate must score above these cutoffs in all four areas. In other words, a candidate must not be seen as tending towards dishonesty, violence, drug abuse, or lying on the inventory. In general, approximately 50% of the applicants who complete the PSI surpass the cutoffs in all areas, and are eligible to continue in the selection process.

The PSI, which has been developed by a firm called London House, involves a series of questions such as "Have you ever stolen property on the job that was worth more than \$5?" As mentioned, the applicant's answers to these questions are used to predict whether the individual is likely to be dishonest, violent, or a substance user/abuser. The assumptions are that applicants will answer honestly and that their past behavior is an effective predictor of their future behavior. Thus, the PSI may not necessarily predict who will be a good officer, but it is designed to screen out those at risk for unreliable behavior.

The third phase of the selection process is an interview. A three-person panel, generally consisting of a captain, a female, and a black, interviews each candidate for approximately 30 minutes (see Attachment A for the set of interview questions and the rating form). In addition, just prior to the interview, the applicant is given a question to which he or she must prepare a written response. After the interview, the interviewers review the short essay to evaluate the applicant's writing style. At this point, the interview panel combines their perceptions of the applicant based on the interview and written response, and assigns the applicant an overall score. An applicant must score 90 on a 100-point scale in order to move on to the next phase.

Following the interview, all remaining applicants are checked out via a background investigation. Two detectives in internal affairs check WALE (Washington Area Law Enforcement) and NCIC (the FBI's National Crime Information Center) for evidence of a criminal record. Anyone with a criminal record is eliminated. They verify that the high school certificate is valid (a certified high school diploma is required), verify the accuracy of the birth certificate, and also verify the college degree and/or transcript. They also do a neighborhood check to get face-to-face evaluation by neighbors. Finally, the detectives check childhood schools, credit rating, employers, references, and friends. A poor employment history is a knock-out factor.

Throughout the selection process the applicants are told that any dishonesty in response to any question will result in disqualification. If, in the background investigation, an inconsistency is discovered between what the individual said or indicated on a form and what the detectives find, the applicant is disqualified. The detective writes up a narrative of what he/she finds and places it in the applicant's folder which is a complete register of the entire selection process. Detectives then summarize the background findings. If they see anything out of the ordinary, they refer it to the captain for review. Approximately half of the applicants are screened out on the basis of this background investigation.

The final phase of the selection procedure is the medical/physical exam. This is done concurrently with the background investigation. In addition to a height and weight requirement, eyes must be correctable to 20/30. Uncorrected eyesight can be no worse than 20/50 in the better eye, 20/60 in the poorer eye, and 20/50 together.

All of the foregoing information is kept in the applicant's file and those who have survived all steps are reviewed by the Assistant Chief who makes the final decision. Approximately 20 people are hired each year. Thus, out of 2500 initial applicants, only 20 or so are hired on a yearly basis.

Monitoring. Again, training will be considered a part of the Metro Transit Police monitoring program. All newly hired people for the "regular" police position are scheduled for training at the Police



Academy in northern Virginia. Like the FBI, they must pass a trigger pull test prior to beginning training, a requirement designed to reduce the number of women who fail to qualify with firearms during training. The training consists of a 13-week course in which officers are trained in police work and given knowledge and skill tests, which they must pass. Currently about 5% of the Metro trainees do not pass the training. Prior to the current selection system, approximately 25-30% failed to pass. Apparently, there is no formal reliability monitoring system for officers while in training other than the informal evaluation made by training officials.

Once on the job, monitoring is in two basic forms: supervisory awareness and an annual physical. Supervisors observe their subordinates for any changes in their conduct and/or appearance, and the Watch Commander inspects everyone. During inspections, particular attention is paid to each officer's eyes, breath, and whether or not orders are understood. The department is especially sensitive about alcohol or drug use. If an officer is suspected of having used such substances, a urine analysis is done. If the person refuses the test, he or she is terminated. If any trace of drugs other than a doctor's prescription or common medicine is detected, the sample is sent for a detailed analysis. If there is evidence of drugs, the individual is terminated. Because of this strict policy, drug use/abuse is believed to be non-existent.

Another form of supervisory monitoring includes steps taken after an officer is involved in a serious incident or accident. The officer involved undergoes a post-incident exam which includes a urine analysis and a breathalyzer, to ensure that drugs were not a factor. Also, all citizen complaints are investigated. The existence of several complaints about a person may suggest that there is some kind of problem. Also, if an officer is having problems related to his/her job performance, the supervisor can discuss it with the officer on-the-spot or schedule an interview/consultation with the officer. When drugs are suspected and confirmed, the individual is terminated. In addition, any interview/consultation gets recorded in the individual's personnel folder. Sometimes the solution adopted is to reassign the individual - perhaps to an assignment with greater supervision or perhaps an assignment from mobile patrol to train station. If a person is not performing well, the department can deny a normal promotion, and if the person hasn't improved in 90 days, they may consider terminating the officer. If disciplinary action is taken and the individual involved is a supervisor, the person can appeal the action. An appeals board handles such situations. If the individual is an officer, the union contract is relevant. In that case, a grievance procedure is followed.

The other form of on-the-job monitoring that is used by the Metro Police is the unannounced physical examination. These are announced only one or two days prior to the actual exam so the individual cannot cleanse his or her body of drugs. Part of the exam is a urine analysis. Another part of the exam is a check on the person's weight. If the person is overweight, he or she has a certain period of time to lose the weight.

Marine Corps Security Guards. The U. S. Marine Corps Security Guard Battalion in Quantico, Virginia was visited in June 1984. This battalion is responsible for security guard services at U. S. Embassies, Legations, and Consulates, including protection of personnel, property, and classified and administratively controlled material and equipment within those premises. The Marine guards are also prepared to protect the foreign security post and its personnel in emergency situations. Training for these guards is provided by both the State Department and the Marine Corps, and once on security guard assignment, the State Department is in operational control while the Marine Corps is in administrative control of the guards.

The requirements for becoming a Marine Security Guard (MSG) are that the individual be a "mature and qualified Marine" in the rank of lance corporal or higher, although a waiver may be granted to qualified privates first class who are then promoted to lance corporal following successful completion of training. More specific requirements for sergeants and below are that the individual:

- 1) is unmarried and agrees to remain unmarried until completion of the tour of duty;
- 2) is a volunteer;
- 3) is a U. S. citizen;
- 4) has a satisfactory security clearance (NAC or ENTNAC);
- 5) if a corporal or below, has average conduct and proficiency ratings of at least 4.2 and 4.2 respectively (the average in MSG is 4.6 and 4.5 respectively, much higher than the normal re-enlistment requirements of 4.0 and 4.0);
- 6) meets Marine Corps standards of personal appearance and has successfully completed the most recent promotion fitness test;
- 7) does not have any of the following disqualifying factors:
  - (a) conviction by general court-martial,
  - (b) conviction by special or summary court-martial during five years immediately prior to MSG assignment,
  - (c) more than one non-judicial punishment during the previous year,
  - (d) a record of civilian conviction for which some type of restraint was imposed,
  - (e) a history of financial instability, or
  - (f) any derogatory information in an applicant's background which may jeopardize a top secret clearance;
- 8) has a minimum derived aptitude score of 90; and
- 9) has at least 32 months obligated service remaining upon reporting to MSG school.

For senior non-commissioned officers (SNCOs), the requirements are:

- 1) qualifications 2 through 7 above;
- 2) those requesting an accompanied tour may not have more than four dependents, including spouse;
- 3) spouses and dependents accompanying the SNCO must be U. S. citizens, either naturalized or hold dual citizenship;

- 4) staff sergeants must have one year in grade; and
- 5) all SNCOs must have at least 26 months obligated service upon reporting to MSG school.

There are a total of 171,000 Marines; of these, only 21,000 meet the above qualifications.

Selection. MSGs are recruited to the security battalion in two principle ways: 1) through informal channels and self-initiated investigation, or 2) through formal recruiting efforts that present information at various Marine bases. Following application, each MSG candidate is interviewed by that individual's commanding officer. This interview focuses on the candidate's confidence, initiative, maturity, judgment under stress, attitude, appearance, and communication skills. The candidate's service record is also examined. Of special interest are the characteristics mentioned above, as well as letters of appreciation, meritorious awards, and medals. Any evidence of drug use, involvement with the law, disciplinary action, financial difficulties, or similar problems are noted.

Health records are reviewed for obvious disqualifying defects such as sleep walking, suicide attempts, history of mental illness, a speech defect, and drug and alcohol abuse. A complete physical/mental examination is also required. The physical includes urinalysis, hematologic studies, and chest x-ray. Health records are also examined for any evidence of an acute, chronic, or unusual condition that could make the person unsuitable for duty in an isolated or remote area. All Marines reporting to MSG school must be in dental classification 1, since dental facilities may be unavailable at their next assignment. In addition, each MSG must pass a detailed background investigation that results in a top secret clearance.

Following initial selection, each MSG candidate is assigned to special training, which is eight weeks in length for SNCOs and six weeks for sergeants and below. Since 40-45% of the SNCOs and 30-35% of the sergeants and below do not successfully complete training, training may be considered the final and toughest hurdle in the selection process. The training is conducted by both the State Department and the Marine Corps, with Marine Corps instruction representing about 60% of the training, the State Department 30%, and specialized training the remaining 10%. Marine Corps instruction includes physical fitness, information on uniforms and civilian clothing, security procedures, honors and ceremonies, administrative matters, and social graces at formal gatherings. State Department training covers Foreign Service establishments, language and culture, use of deadly force, methods of espionage and terrorist activities, and evasive driving. Finally, specialized instruction includes information about bombs and incendiary devices, rescumatic emergency escape devices, emergency medical kits, counter-intelligence, and hostage training.

In addition, MSG training is considered a continuation of the value-instilling process that begins in basic training. Thus, such characteristics and attitudes as obedience to orders, team work, attention to

detail, excellent physical condition, integrity/loyalty, action orientation, impeccable military appearance, and the desire to be a Marine are re-emphasized in MSG training. Those that successfully complete the training embody these values to a very high degree. Each student also has a faculty advisor who has served as an MSG with distinction. This individual serves as a role model for the trainees, in addition to providing counseling and feedback.

There are requirements in several areas for graduation from MSG training. Candidates must qualify with a 38-caliber pistol, their basic side arm, by reaching a high level of accuracy at the firing range. They must also satisfy the physical fitness requirement by 1) running three miles in less than 18 minutes; 2) doing eighty sit-ups in less than two minutes; and 3) doing twenty pull-ups. In addition, their evaluations from instructors, faculty advisor, and peers must be adequate.

The evaluations are combined with the candidate's individualized training record (ITR) and presented to a screening board that meets twice during the training. The ITR is a highly detailed and complete daily log that describes the individual's behavior in training. When combined with the candidate's evaluations from instructors, advisor, and peers, it presents a very comprehensive picture of the candidate. The screening board uses this information to evaluate everyone thoroughly at its first meeting, and to follow up on those who are of questionable suitability at the second meeting. These assessments are particularly rigorous because of the sensitive nature of MSG duty. Improper action by an MSG could easily result in an international incident.

As mentioned, from 30-45% of MSG candidates do not complete MSG training. The primary reasons given for failure in all ranks are lack of maturity and poor attitude, as well as poor leadership ability for SNCOs. Those candidates who do complete training are considered the elite of the elite, the top 5% of the Marine Corps. Immediately following training, MSGs are sent abroad, with the first 15 months spent at a "hardship" (determined on the basis of social, political, and/or economic factors) post.

Monitoring. Once assigned to his post, the behavior of each MSG is monitored both on and off the job. Perhaps thirty MSGs (of the 1250 worldwide) are relieved of duty each year; the reasons for this include such things as dating the ambassador's daughter, sleeping on post, or marriage. Only rarely are MSGs relieved because of drug use, although this is more of a problem in some countries than in others, e.g., Colombia. Drug use monitoring is conducted through urine analyses that are done on a random basis. When performed, the entire detachment is tested.

Olympics Security Headquarters. This site visit took place in Los Angeles in July 1984, and concerned selection of security guards for the 1984 Olympic Games. The majority of Olympic security positions was filled through private security companies who do their own selecting;

there were, however, a number of guards selected through the headquarters facility. Applicants screened by headquarters for a security position were evaluated based on five sources of information: an autobiography, a sentence completion test, an MMPI, a background investigation, and a clinical interview. Each of these is discussed below in more detail.

The autobiography is a statement of what the person thinks are his/her most salient characteristics. This information is supplemented with the sentence completion test. Both of these procedures were developed locally, and there is no standardized scoring procedure for either. They were used primarily to show inconsistencies or areas to be probed later in the clinical interview.

The MMPI was also used to uncover potential problem areas, both through scale scores and responses to individual items. Particular attention was paid to such items as "Have you ever been in trouble with the law?" or "Have you ever stolen anything?" The background information was then compared with information obtained through the other techniques. Special emphasis was placed on the background investigation since "past behavior is the best predictor of future behavior," and the background investigation was seen as the best way to learn about the applicant's past.

The final stage to the selection procedure was the clinical interview, in which all prior information was integrated and probing of sensitive or problem areas occurred. Thus, the interviewer looked for tiny flaws or inconsistencies in the information and "pushed" those areas. The characteristics that were especially valued in applicants are:

- . integrity,
- . compassion,
- . emotional stability and coping with stress,
- . interpersonal skills,
- . maturity, and
- . judgment and decision-making.

Following the probing in the clinical interview, the information was subjectively integrated, and a decision was made as to whether the individual was suitable for hire. Because of the brief duration of the Olympic Games, no formal reliability monitoring program was developed.

Northern States Power Company. Site visits to Northern States Power Company (NSP) were conducted in Minneapolis, Minnesota in September and October 1984. The information obtained in the visits pertained to employees in both nuclear power plants and certain non-nuclear positions, although the applicant rejection rate for nuclear jobs was 8-10% compared to 3-5% for the non-nuclear positions. Thus, it appears that stricter criteria were applied for those working in nuclear plants than those employed in jobs such as information (computer) systems. This might be expected due to the greater overall sensitivity of nuclear jobs.

Selection. The portion of the selection process that will be discussed takes place after the job supervisor has chosen a relatively small number (perhaps five) of applicants that are felt to be well qualified for the job. These applicants have already been selected based on criteria such as previous job experience, and are being evaluated only to determine their employment suitability from a behavioral reliability standpoint. The first step in this process is an examination of the individual's application form. Since this will be used in the background investigation, it is important that the form be complete.

The background investigation, which is the next step, verifies information from the application form and gathers additional information as well. Items that are verified include date of birth; social security number; employment history and references; previous residences; and military, credit, driving, court, and criminal records. Of special interest is the presence and recentness of any substance abuse treatment, and whether the applicant is following the recommendations of any treatment he/she has received. The background investigation goes back five years in collecting information on NSP applicants, and two years for those engaged in contract work at NSP facilities. Once gathered, the information from the background investigation is evaluated by NSP professionals who work in the security area. Derogatory findings, such as a pattern of alcohol abuse despite treatment, may be sufficient to eliminate an applicant from consideration.

The next step in the selection process is a psychological examination. This is scheduled for all NSP applicants that are still under consideration (whose background investigation was acceptable), and those contract persons whose background revealed derogatory information such as a DWI or felony. The psychological exam includes a personal history form, MMPI, CPI, Strong-Campbell Interest Inventory, sentence completion form, and a number of cognitive tests. If the individual is later recommended as eligible for employment in a nuclear facility, the results from the interest inventory, cognitive tests, and personal history form are forwarded to the supervisor to use in the final selection decision.

The MMPI, CPI, and sentence completion test supply information that pertains to the behavioral reliability dimensions that were mentioned earlier in the discussion of target behaviors. Thus, CPI scales such as Responsibility (Re) and Sociability (So) are relevant to the dimensions of "Irresponsibility/Impulsivity" and "Hostility toward Authority." Similarly, the MMPI clinical and alcoholism scales do well in identifying applicants with poor "Emotional Adaptability" (psychopathology) or inappropriate "Reaction to Stress" such as substance abuse. If scores on the CPI or MMPI suggest these problems, or if responses to the sentence completion test are questionable, the applicant is interviewed. (This decision is made after two psychologists agree that it is necessary.) The purpose of this interview is to probe those areas that the tests suggested are problematic, and to get a sample of the applicant's behavior.

Following the psychological examination, all of the information gathered is reviewed and a decision is made whether to recommend the individual as eligible for employment. In this decision, test information is more heavily weighted than interview observations, since the experience of NSP has shown test data to be more effective in identification of unreliable employees. Throughout the selection process, the decision to eliminate an applicant from consideration is always made with the consensus of at least three NSP professionals. In addition, an appeal process is available that includes rescreening of the applicant by a different psychologist.

Monitoring. The current behavioral reliability monitoring program at NSP has changed somewhat since it was initially established. Originally, the program included small groups and role-playing training that was aimed at improving supervisory behavioral monitoring. This training, as well as stress management training, has been dropped due to time constraints and a lack of support among the supervisors/engineers who were receiving it. Currently, therefore, all supervisors receive training in observing behavior and the types of behavior that may indicate unreliability, but the training is shorter, less involved, and less participatory.

The NSP behavioral monitoring program takes place as follows. If a supervisor observes unusual behavior or behavior change on the part of an employee, the supervisor contacts the behavioral reliability coordinator. The coordinator asks the supervisor for details of the incident, the behavioral context, and the supervisor's opinion of what is going on. If it appears that there may be a problem, the employee is called in for an interview by the coordinator. The interview seeks to determine if there is a crisis of some type that is affecting the employee, and whether the crisis appears situational or chronic.

Action following the interview generally takes place in a highly individualized fashion. The employee may be sent for psychological evaluation and therapy through the Employee Assistance Program, or perhaps outside treatment may be recommended. Also, the employee may be relieved of critical duties or given a leave of absence. Throughout this procedure, input is sought from all concerned parties, and the supervisor is kept aware of developments.

According to the site visit interviews, the aforementioned procedures work well when complied with in a timely fashion. The principal problem that NSP is experiencing has to do with the commitment of the supervisors to the process. Many supervisors do not wish to get involved in an employee's problems, particularly if the problems are personal, and the situation may become serious because it was not intercepted promptly. Actually, this criticism is probably true of every organization to a degree, and rests primarily on supervisory commitment and accountability to the program. At NSP, the supervisors that cooperate best with the reliability program are also the best supervisors in general.

Wisconsin Electric. The site visit to Wisconsin Electric (WE) took place in Milwaukee, Wisconsin in September 1984. Emphasis during the site visit was placed on the nuclear plants operated by WE, since the positions in these plants are of a particularly sensitive nature. In addition, WE has established behavioral reliability programs in its nuclear plants that are more comprehensive and current than those in its fossil fuel plants. Therefore, the following discussion pertains entirely to programs in effect in nuclear facilities of WE.

Selection. A two-hurdle selection process is used by WE. First, all applicants are screened with a battery of cognitive tests developed during the Post Operator Selection System (POSS) (Dunnette, Bownas, & Bosshardt, 1981). This empirically validated battery of inventories, tests, and questionnaires is available through the Edison Electric Institute for administration to candidates for operations jobs in electrical power generating plants. These instruments yield scores that are easily interpreted according to varying probabilities of successful work performance. Validities of the battery have been shown to generalize across companies and across candidates regardless of race or sex. WE uses the highest recommended cutoff which is equivalent to a Wechsler intelligence test score of approximately 110. Thus, a very select group of applicants moves on to the second hurdle, psychological assessment.

The psychological assessment is composed of three main parts: an MMPI, an interview, and a background investigation. The assessment is also based on findings from the POSS project, since applicants are assessed on the five categories of unreliable job behavior that were empirically developed as part of that project. These categories are identical to those described earlier in this chapter in the discussion of reliability target behaviors:

- 1) Argumentative hostility toward authority,
- 2) Irresponsibility/Impulsivity,
- 3) Defensive and compulsive incompetence,
- 4) Reaction to stress, and
- 5) Emotional and personal adaptability (psychopathology).

All applicants who pass the first hurdle, the cognitive battery, are given the MMPI. MMPI profiles are evaluated by the behavioral reliability coordinator using very specific decision rules that were professionally developed. In addition, all applicants are scheduled for interviews with experienced placement specialists who have attended a one-day training session on behavioral reliability selection. The placement specialists rate the applicants on two of the five dimensions listed below:

- 1) Argumentative hostility toward authority, and
- 2) Irresponsibility/Impulsivity.

These dimensions were selected as the most amenable to evaluation in an interview setting.



Next, the applicants are scheduled for a background investigation. WE contracts with a private agency to do all background investigations, which include:

- 1) verification of social security number and date of birth with two previous employers, or one previous employer and one educational institution;
- 2) verification of employment history for the last five years;
- 3) verification of educational history;
- 4) investigation of credit history for the last five years;
- 5) investigation of criminal history involving a review of state, county, and municipality records in place of residence and place of employment, if different, for the last five years; and
- 6) review of character references, three of whom are taken from the Nuclear Access Authorization Application and two of whom are developed by the investigating agency.

A written report is submitted with the findings of the investigation within seven working days from its inception.

When the background investigation is completed, the behavioral reliability coordinator reviews all three components of the psychological assessment. If the applicant passes the screen, the coordinator writes a short memo to the security guard who grants the new hire unescorted access to the nuclear plant. If the psychological assessment is "questionable," the coordinator questions the placement specialist to learn if this particular applicant has skills or experience that make him/her especially valuable. If not, the placement specialist is instructed to "put the applicant on hold." If the applicant does have valuable skills or experience, he/she is referred to a clinical psychologist.

The clinical psychologist is an external consultant who has been selected and trained to provide evaluation of applicants with regard to their future behavioral reliability. This individual reviews the MMPI, interview data, and background investigation. He/she also administers the CPI and conducts a clinical interview that probes for more sensitive information than is collected elsewhere in the assessment. Finally, the psychologist recommends whether the applicant should be allowed access to the nuclear facility. Internal transfers into the Nuclear Power Department must also undergo the psychological assessment described above, and all applicants who pass the first hurdle receive a complete medical examination and drug screening as well.

For a typical job opening, WE will receive approximately 700 applications. A resume review, concentrating on grade point average and number of courses in science and math, will reduce the number of applicants to be tested with the POSS battery to 150. The high cutoffs used for the POSS battery will reduce the number of applicants who go through the expensive psychological screening and medical exam to fifty. Approximately, thirty additional applicants will be dropped because of factors uncovered in the medical or psychological assessments.

Monitoring. WE has a commitment to the Nuclear Regulatory Commission (NRC) to re-evaluate those employees with access to the nuclear facility every two years. As a result of this commitment, WE has used professional assistance to aid them in developing an ongoing behavioral reliability program. This process was guided by "Behavioral Reliability Program for the Nuclear Industry," a technical report written by Personnel Decisions, Incorporated (Nureg CR 2076; Buchanan, Davis, & Dunnette, 1981). The report was also used to aid discussions with many WE key groups, discussions that involved the groups in program development and caused them to experience a sense of program "ownership" and commitment. Included in these discussions were:

- . labor relations,
- . employee assistance,
- . medical,
- . accident prevention,
- . legal,
- . nuclear power department, and
- . plant personnel.

The program that developed from these meetings is coordinated by a single person who is known as the reliability coordinator. The program is initiated with a one-day training package that instructs supervisors to recognize gradual deterioration in job performance and that specifies a series of administrative procedures that are appropriate when such deterioration occurs. The training package emphasizes behavior observation (rather than evaluation) and documentation. It relies heavily on case studies and films. In addition, every supervisor is required to complete a Behavior Reliability Job Performance Checklist for each of his/her employees on a yearly basis. This checklist is performance-based and has space for the supervisor to record his/her miscellaneous comments. WE has found that the supervisors often include detailed comments in these sections.

The checklists are returned to the reliability coordinator and do not become part of the employee's personnel files. Employees do not have access to these documents, and information contained in the checklists cannot affect status, promotion, or salary. The coordinator reviews the checklists, consults with the plant manager, and may involve employee assistance or the clinical psychologist when problems surface. In addition, supervisory personnel may contact the coordinator if they become aware of a reliability problem. During the site visit, several case studies were described in which the coordinator had attempted to deal with troubled employees in a highly individualized, non-punitive fashion. The coordinator, however, is not a counselor; rather, he/she refers employees to other professionals for counseling or therapy. Also, in spite of the non-punitive nature of the program, it is not always possible to allow employees with reliability problems to have continued access to the nuclear plant. In these cases, limited plant access or transfer to a fossil fuel plant are both possible alternatives.

WE reports that both supervisory and union personnel have generally supported the behavioral reliability program thus far. The coordinator believes the program is successful because it is performance-based, non-punitive, and emphasizes early identification. He also noted that plant managers appreciate having one contact (the coordinator) when faced with a behavior reliability problem.

WE has also articulated a tough, new drug and alcohol abuse policy. The policy reads:

- 1) any employee found using, possessing, distributing, or selling alcohol while on duty shall be subject to termination;
- 2) any employee using, possessing, selling, or distributing illegal drugs while on duty shall be terminated;
- 3) any employee undergoing medical treatment with a controlled substance shall report it to his/her supervisor; and
- 4) any employee using, possessing, selling, or distributing illegal drugs while off duty shall be subject to severe disciplinary action including termination if it affects job performance or results in publicity.

If a supervisor has probable cause to suspect any employee is under the influence of alcohol or drugs, he can pull that employee off the job and hold him/her in the guard house. Only the person in charge of the entire plant has the authority to ask the employee to undergo drug and alcohol testing at a nearby medical facility. If the employee refuses to submit to drug and alcohol testing, he/she is charged with insubordination and is subject to severe disciplinary action including possible termination.

A behavioral reliability program is also available for WE security guards. A one-day training program for guard supervisors has been developed which is very similar to the plant supervisor training program. Like plant supervisors, guard supervisors are asked to complete Behavior Reliability Checklists. These checklists are returned to the behavioral reliability coordinator who discusses any problems that surface with the private investigatory agency. Because there is no employee assistance program for guards, the thrust of their Behavior Reliability Program is much more punitive. In addition, WE has developed a half-day training program for guards which emphasizes behavior observation and documentation. The administrative procedures to follow when suspect behavior is observed are also reviewed.

Summary/Reprise. Site visits at eight different organizations in various parts of the country have examined a range of behavioral reliability programs. These programs differ in scope, composition, priority, and philosophical approach. They also differ somewhat in the type of jobs to which they apply, although all jobs considered are of a sensitive duty nature. The descriptions of these programs have highlighted a number of factors that affect the efficacy of a behavioral

reliability program in general. Each of these factors therefore has impact on the reliability of personnel in every organization.

One of the most striking things about the selection programs discussed is that the selection ratio was always very favorable to the employing organizations. With such a large applicant pool and small number of available positions, it is far easier to obtain quality employees. The organizations visited will probably continue to enjoy this kind of selectivity. A favorable selection ratio, however, also puts much more pressure on the selection system since many more applicants may be of similar qualifications.

In general, all of the selection programs reviewed used a multiple hurdle approach in which the applicant might be rejected from further consideration at several points in the process. Hurdles that are used in every program include the background investigation, the medical exam, and some type of interview. Other hurdles used in some of the programs include cognitive testing, physical fitness requirements, a polygraph, an honesty inventory, urine analysis, psychological testing and a clinical or psychological interview. Each of these techniques can yield valuable information about future reliability, but certain of them are relatively more useful as was described earlier in this chapter.

Perhaps the biggest criticism of the selection programs discussed is that they rely too heavily on one or two techniques to supply all of their reliability information. As discussed earlier, a background investigation can be incomplete or out of date, an interview can be biased, and a psychological test can yield ambiguous results. Thus, a selection system that relies primarily on only one or two sources of information is more susceptible to erroneous conclusions. A system that incorporates as many of these methods as possible reduces that risk, particularly when the methods correspond closely to later target behaviors on the job (i.e., are valid). Therefore, an optimal selection system is one that employs information gathering techniques of established validity, and one that counterbalances those techniques so that a lack of information in one area of reliability is compensated for by valid data from another method.

To expand this point a bit further, consider the way in which information is used in decisions to screen out an individual from further consideration. Suppose that the background investigation has found that the individual has occasionally bounced checks and has lived at four different addresses in three years. If this information is to be used to reject the applicant, one would want to know whether there really is a relationship between this behavior and later reliability. Also, with a great deal of information available of many different types, what evidence is there that this information was combined in a valid way to produce a selection decision? Clinical judgment may be highly subject to bias, and in addition, is often not specified nor supported in any formalized way.

With regard to monitoring, there is less similarity across the site visits. Some of the organizations do monitoring informally as part of the normal supervision process. Other organizations take a more active posture in which behavior is monitored on a regular basis, and supervisors are trained to both recognize and deal with incipient unreliable behavior. Techniques such as unannounced urine analysis or incident review panels are also used. All of the organizations have established procedures for dealing with unreliable behavior once it occurs; these interventions vary along a continuum from highly punitive to extremely supportive.

Overall, the greatest potential weakness of the reliability programs discussed has to do with identification of the target behaviors that show unreliability on the job. Selection decisions should be made on the basis of known relationships with these target behaviors, but often the target behaviors have not even been specified. Similarly, it is difficult for proper monitoring to take place if supervisors are unsure of the behaviors that are unreliable or that lead to unreliability. The type of information that is needed here is not a listing of traits or a description of job tasks. Rather it is the result of a particular type of job analysis that focuses specifically on reliability of behavior. Only by identifying the behaviors that precede or show unreliability in a particular organization can optimal selection and monitoring take place.

## CHAPTER 7

### INTEGRATION AND RECOMMENDATIONS

Throughout this report, an attempt has been made to summarize the key findings obtained and to interpret these findings in terms that relate to behavioral reliability. This final chapter represents a recapitulation of these findings in a format that allows integration and suggests recommendations. Thus, the discussion of each of the factors that affects behavioral reliability is abstracted so that "the big picture" can be examined as the basis for future decision-making. In addition, a descriptive model is presented to aid in conceptualizing the behavioral reliability process. This model is shown in Figure 7.1. In general, it can be seen that personal characteristics, environmental characteristics, life events, stress, coping, and the target behaviors themselves all work in interaction, feeding back on each other in a dynamic and ongoing process. There is also, however, a progression in the process that begins with the person and the job, and proceeds through stress, coping, and early and later target behaviors to some type of problem resolution. The three major activities of a behavioral reliability program - selection, monitoring, and intervention - place the process in a temporal light. Although these three activities overlap to some degree, they are also distinct from each other.

Proper selection, which focuses on the personal characteristics desired, identifies these characteristics from what is known about the work environment, the stress and coping process, and the types of behaviors that are considered unreliable. Each of these pieces of information contributes to a better understanding of the type of person most at risk for unreliability, and thus enhances selection. Monitoring, which overlaps with selection, focuses almost entirely on observable behaviors, although personal and environmental characteristics and life events may affect how observed behaviors are interpreted. Monitoring also gives the best perspective of the process of unreliable behavior, through an observed progression from stress and coping to increasingly serious target behaviors.

The final major aspect of a behavioral reliability program is intervention, which takes place only when early target behaviors indicate a dangerous or worsening pattern or when an employee has displayed one or more later target behaviors. Intervention overlaps with the later stages of monitoring so that the problem resolution that is chosen is appropriate for the individual and the situation. Thus, selection, monitoring, and intervention each play a distinct role in a behavioral reliability program, but overlap with each other in order to improve the decisions made in each phase. The overlapping also provides validity information for each phase, e.g., when monitoring provides information on the success of selection, or when intervention results show that monitoring had accurately detected the problem. The following discussion pertains to each of these three areas and how they might best be conducted.

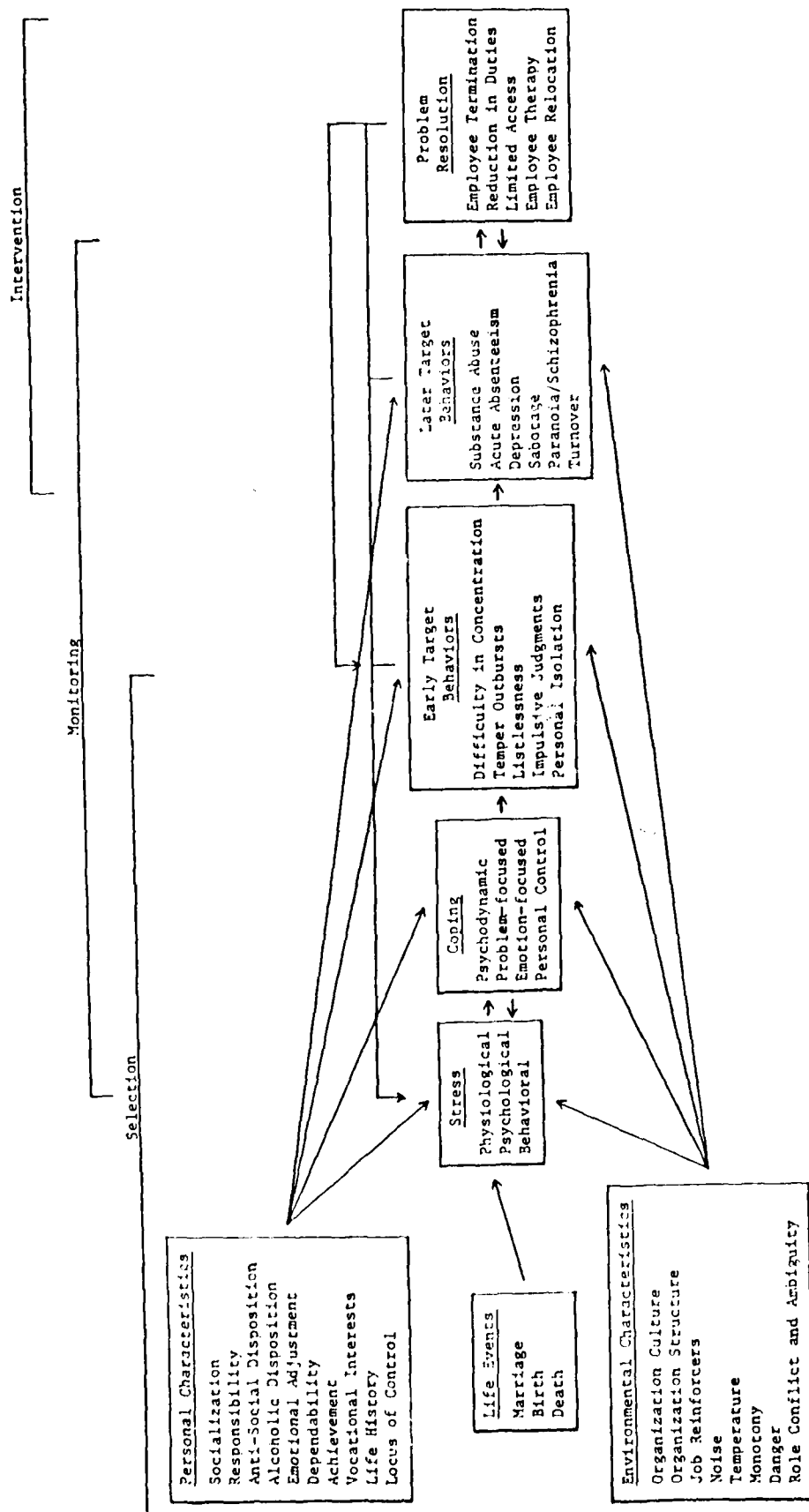


Figure 6. A heuristic model of behavioral reliability process.

Beginning with selection, the first step should be a job analysis that identifies the target behaviors of the particular job or jobs in question. This analysis forms the basis for the choice of predictors to be used in selection decisions. For example, a set of target behaviors may be identified that is similar to the set found in the Edison Electric Institute (EEI) study discussed earlier (Dunnette, Bownas, & Bosshardt, 1981). These behaviors are categorized into five major headings:

- Argumentative Hostility toward Authority,
- Irresponsibility,
- Defensive Incompetence,
- Reaction to Stress, and
- Emotional and Personal Adaptability.

These behavioral categories can be used to structure a prototype for selection that would proceed as shown in Table 7.1. (It may be useful to review pp. 110-112 to conceptualize the behavioral categories more completely.) Table 7.1 shows three major methods of collecting selection information that constitute the minimum requirements for a selection decision. Thus, predictors from psychological testing, a background investigation, and an interview are shown as they pertain to the five categories of target behaviors and as they would be used in making a selection decision. There is overlap in Table 7.1, both among the target behaviors and among the predictors, but the figure does represent the principal findings that have been gleaned from the literature and site visits. Therefore, although one may say that a particular predictor applies to more than one target behavior, the crux of the prototype is to show the predictors that relate to reliability within this set of behaviors.

For illustrative purposes, two of the target behavior categories and their predictors will be described in more detail. The category "Argumentative Hostility toward Authority" includes behaviors in which an individual "has to do it his way," thereby creating problems with coworkers and supervisors. The psychological test scale scores that have been shown to predict these behaviors are high anti-social disposition, low socialization, low self-control, low achievement via conformance, and high achievement via independence. Each of these scales measures a somewhat different aspect of the tendency to fight the system or to behave independently even when there is every reason to conform. Background investigation information that is related to this category includes the number of fights or disciplinary problems in which the individual has been involved, and the quality of previous supervisory and coworker relationships. Similarly, the interview is well-suited to assessing how an individual reacts to criticism, and how rigid and isolated he/she appears to be.

A second target behavior category given in Table 7.1 is "Defensive Incompetence." This includes behaviors in which the individual is afraid or unable to act effectively, yet will cover up his/her own inaction in order to appear effective. Psychological scale scores that



Table 7.1. A prototype for behavioral reliability selection.

Target Behavior Categories	Psychological Test	Background Investigation	Interview
Argumentative Hostility toward Authority	High Anti-Social Disposition (MMPI Pd Scale)	Previous fights on or off job	Reaction to criticism
	Low Socialization (CPI So Scale)	Times disciplined on previous jobs	Rigidity
	Low Self-Control (CPI Sc Scale)	Previous coworker relationships	Isolationism
	Low Achievement via Conformance (CPI Ac Scale)	Previous supervisor relationships	
	High Achievement via Independence (CPI Ai Scale)		
Irresponsibility	Low Responsibility (CPI Re Scale)	Previous tardiness	Reaction to mistakes
	High Mania (MMPI Ma Scale)	Previous absenteeism	Judgment on spur of moment
	High Impulsiveness (DPO Control Scale)	Number of previous job accidents	Truthfulness
	Low Harm Avoidance (DPO Harm Avoidance Scale)	Previous theft or vandalism	Reaction to boredom
Defensive Incompetence	Low Social Presence (CPI Sp Scale)	Previous job inaction	Worries about life and job
	Low Self-Acceptance (CPI Sa Scale)	False information on application about previous failures	Reaction to ambiguous job requirements
	High Paranoia (MMPI Pa Scale)	Previous fear-related behavior	Reaction to an extremely difficult question
	Low Achievement via Independence (CPI Ai Scale)		
Reaction to Stress	High Alcoholic Disposition (MMPI Alcoholism Scales)	Previous substance abuse	Perceptions of stressful situations
	External Locus of Control (Rotter I-E Scale)	Previous reaction to life events	Support network
	Low Coping Skills (("Ways of Coping" Scale)	Previous ability to handle pressure	Stress-Performance relationship
	Low Stress Reaction (DPO Stress Reaction Scale)	Previous coping behaviors	
Emotional and Personal Adaptability	Schizophrenia (MMPI Sc Scale)	Previous mental health	Personal Appearance
	Mania (MMPI Ma Scale)	Previous suicide attempts/threats	Ability to Concentrate
	Depression (MMPI D Scale)	Health history	Affect
	Paranoia (MMPI Pa Scale)	Number sick days taken	Alertness
			Mental Organization

Note: MMPI = Minnesota Multiphasic Personality Inventory (Hathaway & McKinley, 1940)  
CPI = California Psychological Inventory (Gough, 1957)  
DPO = Differential Personality Questionnaire (Tellegen, 1983)

predict these behaviors include low social presence, self-acceptance, and achievement via independence, and high paranoia. Relevant background information includes previous job inaction, falsification of failures, and fearful behavior such as phobias or timidity. The interview could probe whether the individual worries excessively, particularly in response to ambiguous job requirements. Also, the interviewer could ask an extremely difficult question to determine how much the individual will cover up his/her ignorance or incompetence.

The three predictor categories shown in Figure 7.1 complement each other quite well since they each use a different method to gather information. More importantly, each of the predictors shown is related to the target behaviors of our prototype job, as documented in either the academic literature or the site visits. To the extent that a particular job differs in target behaviors from the prototype, these predictors may also differ. The point of the selection prototype, however, is to show an empirically derived set of target behaviors and a set of predictors empirically related to them. Thus, although the predictors or behaviors may differ somewhat by job, the essential process for selection has been illustrated and a group of probable predictors has been identified. Future work in selection for behavioral reliability should follow this basic model.

Specification of the target behaviors is also crucial in monitoring of behavioral reliability. Supervisors must be trained so that early target behaviors are recognized, and a gradual progression towards unreliability is noted. Again, referral to the five target behavior categories given on pp. 110-112 show how behaviors must be listed so that supervisors can recognize what constitutes unreliability. Basically, this listing represents a prototype of the way behavioral monitoring should occur. The behaviors must be specific, yet be grouped with other behaviors in a way that makes conceptual sense and is easy to use. In addition, the listing of behaviors must be generalized and comprehensive enough so that a supervisor can make a reasonable decision about a behavior that is not specifically listed, and whether it warrants closer observation. Finally, supervisors must be trained to observe not only the behavior itself, but also the context in which it occurred.

Job and environment characteristics should be taken into account as possible predisposing factors toward stress and unreliable behavior. Noise, extreme temperature, monotony, danger, role conflict and ambiguity, job reinforcers, and organizational structure and culture have all been shown to produce stress. The presence of these factors will therefore increase the risk of unreliability among employees in those work environments. Employees are also at greater risk for unreliability when they have recently experienced significant life events, e.g., divorce. A supervisor aware of these events might monitor the employee's performance more closely for a period of time.

Coping with stress is another area of behavior that should be monitored. For example, if an employee appears to be coping less effectively with job stress than previously, or if the manner of coping changes fairly suddenly, it may warrant further attention. Similarly, coping that is primarily emotion-focused rather than problem-focused places the employee at greater risk for unreliability, especially over the long term. Workers who cope by gaining control over the stressful situation are less likely to have reliability problems than those whose coping denies the stress or attributes it elsewhere. Finally, the success of coping depends to a degree on the support network that the individual uses. Monitoring of coping should therefore recognize that certain individuals may be at greater risk because of a lack of a good personal support system.

A closing recommendation that applies to monitoring has to do with the commitment of supervisors to the monitoring process. It is crucial that this commitment exist, for without it even the most carefully designed monitoring program will fail. A degree of commitment can be elicited by emphasizing the importance of a sound monitoring program, but often this resolve fades in the day-to-day demands of the supervisor's job. Therefore, it appears that consistent commitment should be reinforced regularly by the organization's top management, and cemented through supervisory accountability. In other words, behavioral reliability monitoring should be a job requirement for supervisors on which they are regularly evaluated, and for which they are held responsible. This accountability, combined with top management support, is necessary to ensure that reliability monitoring is not just another supervisory nicety that can be safely de-emphasized without penalty.

In contrast to selection and monitoring in which a number of general rules apply, intervention is much more an individualized process. The decision to fire, relocate, or counsel an unreliable employee depends to a great degree on the individual and situation involved, even if the behavior itself is quite clear-cut. Also, intervention is perhaps more affected by the value system of the organization, or the way in which it prefers to handle its employees and their problems. Thus, an intervention such as termination of employment might be judged appropriate for a given target behavior in one organization and be totally inappropriate in another. Two general principles do affect the efficacy of intervention programs, however, and are discussed below.

In order to be consistent for all employees, an intervention must be based upon a hierarchy of target behaviors. This hierarchy will differ across organizations since both the target behaviors and their seriousness will differ with the organization. The point, however, is that behaviors can be placed in classes or categories, and assigned values as to their seriousness or danger. These values then represent a hierarchy, and can be used to increase the consistency and fairness of an intervention. For example, one might expect that temper outbursts would be lower in the hierarchy than sabotage since the former is far less

serious. Therefore, in deciding on an intervention for an employee with temper outbursts, one could examine the hierarchy and previous interventions, and come to a decision that was in accord with both the behavior and organizational policy. Unusual circumstances could still be taken into account, but the hierarchy would ensure that the circumstances did not unduly affect the choice of intervention.

A second factor that involves interventions may easily affect the entire monitoring process. This factor, the punitiveness of the intervention, often exerts its influence indirectly when supervisors refuse to refer unreliable employees who might be disciplined or fired for their behavior. These supervisors do not want to face the morale problems that punitive interventions may produce, and simply ignore the unreliable behavior. The entire monitoring process is therefore jeopardized because supervisors see the reliability program as a way of punishing employees rather than a means of improving the organization or helping employees with their problems. Thus, reliability monitoring becomes another form of performance evaluation, but one with more severe consequences for poor performance.

There is not a perfect solution to this problem since punitive interventions are sometimes the best way to deal with an unreliable employee, and all interventions could be seen as punitive. Perhaps the best approach to apply is to give an unreliable employee some options and thereby reduce the autocratic nature of an intervention. For example, an employee could be offered therapy or relocation to another job rather than being fired. Also, an appeal process should be included so that an employee can contest an undesired intervention. Ideally, if selection and monitoring are functioning effectively, there should be few interventions required, and those that are needed would be instituted before an unreliability problem became severe. In general, however, the punitive nature of interventions should be as limited as possible to avoid undermining the total program.

In closing this report and these recommendations, it is important to again remember that unreliable behavior and behavior in general are the result of numerous interactions. Because of these complex interactions, there remains much of behavior that is poorly understood. This report has attempted to consider these interactions in its review and recommendations, but acknowledges that the current state of understanding limits absolute conclusions. Despite this lack of perfect knowledge, decisions must be made. Applicants must be selected, behaviors must be monitored, and interventions must be chosen. These decisions should be reached on the basis of the best evidence available: the target behaviors of the job and the established relationships of selection, monitoring, and intervention to these behaviors. If followed closely, a behavioral reliability program that is fair to the employees and effective for the organization will be the result.

# LIST OF REFERENCES

- Abdel-Halim, A. (1978). Employee affective responses to organizational stress: Moderating effects of job characteristics. Personnel Psychology, 31, 561-579.
- Allnut, M. F., & Allan, J. R. (1973). The effects of core temperature elevation and thermal sensation on performance. Ergonomics, 16, 189-196.
- Allport, G. W. (1937). Personality: A psychological interpretation. New York: Henry Holt & Company.
- Allport, G. W., & Odbert, H. S. (1936). Trait names: A psycholexical study. Psychological Monographs, 47(1, Whole No. 211).
- Althouse, R., & Hurrell, J. (1977). An analysis of job stress in coal mining (DHEW Publication No. 77217). Washington, DC: U. S. Government Printing Office.
- Anastasi, A. (1948). Differential psychology. New York: MacMillan.
- Anderson, C. R. (1977). Locus of control, coping behaviors, and performance in a stress setting: A longitudinal study. Journal of Applied Psychology, 62, 446-451.
- Andrew, J. (1970). Recovery from surgery, with and without preparatory instructions, for three coping styles. Journal of Personality and Social Psychology, 223-226.
- Andrews, G., Tennant, C., Hewson, D., & Vaillant, G. (1978). Life event stress, social support, coping style, and risk of psychological impairment. Journal of Nervous and Mental Disease, 166, 307-315.
- Angus, R. G., Pearce, D. G., Buguet, A. G. C., & Olsen, L. (1979). Vigilance performance of men sleeping under arctic conditions. Aviation, Space and Environmental Medicine, 50, 692-696.
- Archer, R. P. (1979). Relationships between locus of control and anxiety. Journal of Personality Assessment, 43, 617-626.
- Averill, J. R. (1973). Personal control over aversive stimuli and its relationship to stress. Psychological Bulletin, 80, 286-303.
- Balke, B., Melton, C. E., & Blake, C. (1966). Physiological stress and fatigue in aerial missions for the control of forest fires. Aerospace Medicine, 37, 221-227.

- Barge, B. N., & Hough, L. M. (1983b). Biographical data. Unnumbered research report. Minneapolis, MN: Personnel Decisions Research Institute.
- Barge, B. N., & Hough, L. M. (1983a). Vocational interests and needs. Unnumbered research report. Minneapolis, MN: Personnel Decisions Research Institute.
- Barker, R. (1968). Ecological psychology. Stanford, CA: Stanford University Press.
- Barmack, J. E. (1937). Boredom and other factors in the physiology of mental effort: An exploratory study. Archives of Psychology, 218, 1-83.
- Barrett, J. E. (1979). Stress and mental disorder. New York: Raven.
- Basowitz, H., Persky, H., Korchen, S., & Grinker, R. (1955). Anxiety and stress. New York: McGraw-Hill.
- Bedeian, A. G., & Armenakis, A. A. (1981). A path-analytic study of the consequences of role conflict and ambiguity. Academy of Management Journal, 24, 417-424.
- Beehr, T. A., & Newman, J. E. (1978). Job stress, employee health, and organizational effectiveness: A facet analysis, model, and literature review. Personnel Psychology, 31, 665-699.
- Beehr, T. A., Walsh, J. T., & Taber, T. D. (1976). Relationship of stress to individually and organizationally valued states: Higher order needs as a moderator. Journal of Applied Psychology, 61, 41-47.
- Berkun, M. M. (1964). Performance decrement under psychological stress. Human Factors, 6, 21-30.
- Berlyne, D. E. (1960). Conflict, arousal and curiosity. New York: McGraw-Hill.
- Berzins, J. I., Ross, W. F., & Monroe, J. J. (1971). A multivariate study of the personality characteristics of hospitalized narcotic addicts on the MMPI. Journal of Clinical Psychology, 27, 174-181.
- Biggs, D. A., Orcutt, J. B., & Bakkenist, N. (1974). Correlates of marijuana and alcohol use among college students. Journal of College Student Personnel, 15, 22-30.

- Billings, C. E., Gerke, R. J., Chase, R. C., & Eggspuehler, J. J. (1973). Stress and strain in student helicopter pilots. Aerospace Medicine, 44, 1031-1035.
- Black, F. W., & Heald, A. (1975). MMPI characteristics of alcohol and illicit drug abusers enrolled in a rehabilitation program. Journal of Clinical Psychology, 31, 572-575.
- Block, J. (1965). The challenge of response sets. New York: Appleton-Century-Crofts.
- Block, J. (1977). Advancing the psychology of personality: Paradigmatic shift or improving the quality of research? In D. Magnusson & N. S. Endler (Eds.), Personality at the crossroads: Current issues in interactional psychology. Hillsdale, NJ: Erlbaum.
- Bloom, G., Euler, V. S., & Frankenhauser, M. (1963). Catecholamine excretion and personality traits in paratroop trainees. Acta Physiologica Scandinavica, 58, 77-89.
- Borman, W. C., Roberson, L., & Rose, S. (1984). Constraint and climate factors in the work environment. Unpublished manuscript. Minneapolis, MN: Personnel Decisions Research Institute.
- Bowers, K. S. (1973). Situationism in psychology: An analysis and a critique. Psychological Review, 80, 307-336.
- Bracken, M. B., & Bernstein, M. (1980). Adaptation and coping with disability one year after spinal cord injury: An epidemiological study. Social Psychology, 15, 33-42.
- Bramel, D. (1962). A dissonance theory approach to defensive projection. Journal of Abnormal and Social Psychology, 64, 121-129.
- Brief, A. P., & Aldag, R. J. (1976). Correlates of role indices. Journal of Applied Psychology, 61, 468-472.
- Broadbent, D. E. (1953). Noise, paced performance and vigilance tasks. British Journal of Psychology, 44, 295-303.
- Broadbent, D. E., & Little, F. A. J. (1960). Effects of noise reduction in a work situation. Occupational Psychology, 34, 133-140.
- Brown, G. W., & Harris, T. (1978). The social origins of depression: A study of psychiatric disorder in women. London: Tavistock.
- Brown, G. W., Harris, T. O., & Peto, J. (1973). Life events and psychiatric disorders. Part 2: Nature of causal link. Psychological Medicine, 3, 159-176.

- Buchanan, J. C., Davis, S. O., & Dunnette, M. D. (1981). Behavioral reliability program for the nuclear industry (NUREG Report No. CR-2076). Washington, D. C.: U. S. Nuclear Regulatory Commission.
- Bucky, S. F., Edwards, D., & Thomas, E. D. (1974). Intensity: The description of a realistic measure of drug use. Journal of Clinical Psychology, 30, 161-163.
- Bull, A. J., Burbage, S. E., Crandall, J. E., Fletcher, C. I., Lloyd, J. T., Ravenberg, R. L., & Rockett, S. L. (1972). Effects of noise and intolerance of ambiguity upon attraction for similar and dissimilar others. Journal of Social Psychology, 88, 151-152.
- Bulman, R. J., & Wortman, C. B. (1977). Attributions of blame and coping in the "real world": Severe accident victims react to their lot. Journal of Personality and Social Psychology, 35, 351-363.
- Burke, R. J., Deszca, E. (1982). Preferred organizational climates of Type A individuals. Journal of Vocational Behavior, 21, 50-59.
- Buros, O. K. (1978). The eighth mental measurements yearbook. Highland Park, NJ: Gryphon Press.
- Button, A. D. (1956). A study of alcoholics with the MMPI. Quarterly Journal of Studies on Alcohol, 17, 263-281.
- Campbell, D. P. (1971). Handbook for the Strong Vocational Interest Blank. Stanford, CA: Stanford University Press.
- Cannon, W. G. (1935). Stressors and strains of homeostasis. American Journal of Medical Science, 189, 1-14.
- Caplan, R. D. (1971). Organizational stress and individual strain: A social-psychological study of risk factors in coronary heart disease among administrators, engineers, and scientists. Ann Arbor, MI: Research Center for Group Dynamics.
- Caplan, R. D. (1972). Organizational stress and individual strain: A social psychological study of risk factors in coronary heart disease among administrators, engineers, and scientists. Dissertation Abstracts International, 32(11B), 6706B.
- Caplan, R. D., Cobb, S., French, J. R. P., Jr., Harrison, R. V., & Pinneau, S. R., Jr. (1975). Job demands and worker health: Main effects and occupational differences (DHEW (NIOSH) Publication No. 75-160). Washington, DC: U. S. Government Printing Office.
- Caplan, R. D., & Jones, K. W. (1975). Effects of workload, role ambiguity, and Type A personality on anxiety, depression, and heart rate. Journal of Applied Psychology, 60, 713-719.



- Cattell, R. B. (1950). Personality: A systematic, theoretical, and factual study. New York: McGraw-Hill.
- Cattell, R. B., Eber, H. W., & Tatsuoka, M. M. (1970). Handbook for the Sixteen Personality Factor Questionnaire (16PF). Champaign, IL: Institute for Personality and Ability Testing.
- Chandler, A. D. (1956). Management decentralization: An historical analysis. Business History Review, 30, 111-174.
- Chein, I. (1954). The environment as a determinant of behavior. Journal of Social Psychology, 39, 115-127.
- Cleary, P. J. (1981). Problems of internal consistency and scaling in life events schedules. Journal of Psychosomatic Research, 25, 309-320.
- Cobb, S. (1976). Social support as a moderator of life stress. Psychosomatic Medicine, 38, 300-314.
- Cohen, A. (1974). Industrial noise and medical, absence and accident record data on exposed workers. In W. D. Ward (Ed.), Proceedings of the International Congress on Noise as a Public Health Problem. Washington, DC: U. S. Environmental Protection Agency.
- Cohen, A. (1976). The influence of a company hearing conservation program on extra-auditory problems in workers. Journal of Safety Research, 8, 146-162.
- Cohen, S. (1980). Aftereffects of stress on human performance and social behavior: A review of research and theory. Psychological Bulletin, 88, 82-108.
- Cohen, S. (1978). Environmental overload and the allocation of attention. In A. Baum, J. E. Singer, & S. Valins (Eds.), Advances in environmental psychology, Vol. 1. Hillsdale, NJ: Erlbaum.
- Cohen, S., & Spacapan, S. (1978). The aftereffects of stress: An attentional interpretation. Environmental Psychology and Nonverbal Behavior, 3, 43-57.
- Cooper, C. L., & Green, M. D. (1976). Coping with occupational stress among Royal Air Force personnel on isolated island bases. Psychological Reports, 39, 731-734.
- Corcoran, D. W. (1962). Noise and loss of sleep. Quarterly Journal of Experimental Psychology, 14, 178-182.
- Corso, J. F. (1959). The effects of noise on human behavior (WADS Technical Report No. 53-81, 1952). Wright-Patterson AFB, OH: Wright Air Development Center. Cited by R. Plutchik, The effects of high intensity intermittent sound on performance, feeling, and physiology. Psychological Bulletin, 56, 133-151.
- Cronbach, L. J. (1970). Essentials of psychological testing. New York: Harper & Row.

- Crowne, D. P., & Liverant, S. (1963). Conformity under varying conditions of commitment. Journal of Abnormal and Social Psychology, 66, 547-555.
- Dawis, R. V., Lofquist, L. H., & Weiss, D. J. (1968). A theory of work adjustment (A revision). Minnesota Studies in Vocational Rehabilitation, Bulletin 23.
- Dawis, R. V., Lofquist, L. H., Henly, G. A., & Rounds, J. B., Jr. (1979/1982). Minnesota Occupational Classification System II. Vocational Psychology Research, Department of Psychology, University of Minnesota, Minneapolis.
- DeLong, D. R. (1971). Individual differences in patterns of anxiety arousal, stress-relevant information, and recovery from surgery. Unpublished doctoral dissertation, University of California, Los Angeles.
- Denney, D. R., & Frisch, M. B. (1981). The role of neuroticism in relation to life stress and illness. Journal of Psychosomatic Research, 25, 303-307.
- Donnerstein, E., & Wilson, D. W. (1976). Effects of noise and perceived control on ongoing and subsequent aggressive behavior. Journal of Personality and Social Psychology, 34, 774-781.
- Dunnette, M. D. (1983). Defining properties of job requirements/work environment categories. Unpublished manuscript. Minneapolis, MN: Personnel Decisions Research Institute.
- Dunnette, M. D., Bownas, D. A., & Bosshardt, M. J. (1981). Prediction of inappropriate, unreliable, or aberrant job behavior in nuclear power plant settings (Technical Report No. 62). Minneapolis, MN: Personnel Decisions Research Institute.
- Eaton, W. W. (1978). Life events, social supports, and psychiatric symptoms: A reanalysis of the New Haven data. Journal of Health and Social Behavior, 19, 130-234.
- Eberhardt, B. J., & Muchinsky, P. M. (1982). Biodata determinants of vocational typology: An integration of two paradigms. Journal of Applied Psychology, 67(6), 714-727.
- Edsell, R. D. (1976). Social stress and community psychology. American Journal of Community Psychology, 6, 1-14.
- Eide, R., & Atterass, A. (1978). Blood glucose. In H. Ursin, E. Baade, & S. Levine (Eds.), Psychobiology of stress: A study of coping men. New York: Academic Press.

- Ellis, A., & Conrad, H. S. (1948). The validity of personality inventories in military practice. Psychological Bulletin, 45, 385-426.
- Endler, N. S., & Magnusson, D. (1976). Interactional psychology and personality. Washington, DC: Hemisphere Publishing.
- Epstein, S., & Fenz, W. D. (1965). Steepness of approach and avoidance gradients in humans as a function of experience: Theory and experiment. Journal of Experimental Psychology, 70, 1-12.
- Epstein, Y., Keren, G., Moisseiev, J., Gasko, O., & Yachin, S. (1980). Psychomotor deterioration during exposure to heat. Aviation, Space and Environmental Medicine, 51(6), 607-610.
- Eysenck, M. W. (1979). Anxiety, learning and memory: A reconceptualization. Journal of Research in Personality, 13, 363-385.
- Eysenck, M. W. (1983). In R. Hockey (Ed.), Stress and fatigue in human performance (pp. 169-201). New York: J. Wiley & Sons.
- Favazza, A. R., & Pires, J. (1974). The Michigan Alcoholism Screening Test: Application in a general military hospital. Quarterly Journal of Studies on Alcohol, 35, 925-929.
- Federal Register. (1984). Access authorization program for the Nuclear Regulatory Commission. Volume 49, No. 149, August, 1, pp. 30726-30739.
- Fenz, W. D. (1964). Conflict and stress as related to physiological activation and sensory, perceptual, and cognitive functioning. Psychological Monographs, 78(8, Whole No. 585). 33 pp.
- Fenz, W. D., & Epstein, S. (1962). Measurement of approach-avoidance conflict along a stimulus dimension by a thematic apperception test. Journal of Personality, 30, 613-632.
- Fenz, W. D., & Epstein, S. (1967). Changes in gradients of skin conductance, heart rate and respiration rate as a function of experience. Psychosomatic Medicine, 29, 33-51.
- Fenz, W. D., & Epstein, S. (1968). Specific and general inhibitory reactions associated with mastery of stress. Journal of Experimental Psychology, 77, 52-56.
- Fenz, W. D., & Jones, B. (1972). The effect of uncertainty on mastery of stress: A case study. Psychophysiology, 9, 615-619.
- Ferguson, D. (1973). A study of occupational stress and health. Ergonomics, 16, 649-664.

- Fisher, C. D., & Gitelson, R. (1983). A meta-analysis of the correlates of role conflict and ambiguity. Journal of Applied Psychology, 68, 320-333.
- Flanagan, J. C. (1954). The critical incident technique. Psychological Bulletin, 51, 327-358.
- Folkman, S. (1982). An approach to the measurement of coping. Journal of Occupational Behavior, 3, 95-108.
- Folkman, W. (1984). Personal control and stress and coping processes: A theoretical analysis. Journal of Personality and Social Psychology, 46, 839-852.
- Folkman, S., & Lazarus, R. S. (1980). An analysis of coping in a middle-aged community sample. Journal of Health and Social Behavior, 21, 219-239.
- Ford, C. V., & Spaulding, R. C. (1973). The Pueblo incident: A comparison of factors related to coping with stress. Archives of General Psychiatry, 29, 340-343.
- Francesconi, R. P., Fine, B. J., & Kobrick, J. L. (1976). Heat and simulated high altitude: Effects on biochemical indices of stress and performance. Aviation, Space, and Environmental Medicine, 47 (5), 548-552.
- Freeberg, N. E. (1967). The biographical information blank as a predictor of student achievement: A review. Psychological Reports, 20, 911-925.
- French, J., & Caplan, R. D. (1973). Organizational stress and individual strain. In A. J. Marow (Ed.), The Failure of Success (Chapter 2, pp. 30-66). New York: AMACOM.
- French, J. R. P., Jr., Caplan, R. D., & Harrison, R. V. (1982). Mechanisms of job stress and strain. New York: J. Wiley & Sons.
- French, J. R. P., Jr., Rodgers, W., & Cobb, S. (1974). Adjustment as a person environment fit. In G. V. Coelho, D. A. Hamburg, & J. F. Adams (Eds.), Coping and adaptation: Interdisciplinary perspectives. New York: Basic Book.
- French, J. R. P., Jr., Tupper, C. J., & Mueller, E. F. (1965). Work load of university professors. Ann Arbor, MI: Institute for Social Research.
- French, J. W. (1973). Toward the establishment of noncognitive factors through literature search and interpretation. Princeton, NJ: Educational Testing Service.

- Gafafer, W. M. (1964). Occupational diseases: A guide to their recognition (DHEW Publication). Washington, DC: United States Government Printing Office.
- Gaydos, H. F., & Dusek, E. R. (1958). Effects of localized hand cooling versus total body cooling on manual performance. Journal of Applied Psychology, 12, 377-380.
- Ghiselli, E. E. (1973). The validity of aptitude tests in personnel selection. Personnel Psychology, 26, 461-477.
- Ghiselli, E. E., & Barthol, R. P. (1953). The validity of personality inventories in selecting employees. Journal of Applied Psychology, 37, 18-20.
- Gilbert, J. G., & Lombardi, D. N. (1967). Personality characteristics of young male narcotic addicts. Journal of Consulting Psychology, 31, 536-538.
- Glass, D. C. (1977). Behavior patterns, stress and coronary disease. New York: J. Wiley & Sons.
- Glass, D. C., & Singer, J. E. (1972). Urban stress: Experiments on noise and social stressors. New York: Academic Press.
- Glass, G. V. (1977). Integrating findings: The meta-analysis of research. Review of Research in Education, 5, 351-379.
- Goldberg, L. R. (1981). Language and individual differences: The search for universals in personality lexicons. In L. Wheeler (Ed.), Personality and social psychology review (Vol. 2). Beverly Hills, CA: Sage.
- Goldstein, M. (1973). Individual differences in response to stress. American Journal of Community Psychology, 1, 113-137.
- Goodenough, F. (1949). Mental testing: Its history, principles, and applications. New York: Holt, Rhinehart, & Winston.
- Gore, S. (1981). Stress buffeting functions of social supports: An appraisal and clarification of research models. In B. S. Dohrenwend & B. P. Dohrenwend (Eds.), Stressful life events and their control. New York: Prodist.
- Gough, H. (1976). Personality and personality assessment. In M. D. Dunnette (Ed.), Handbook of Industrial and Organizational Psychology. Chicago: Rand-McNally.
- Greene, C. N. (1972). Relationships among role accuracy, compliance, performance evaluation and satisfaction within managerial dyads. Academy of Management Journal, 15, 205-215.
- Guest, D., Williams, R., & Dewe, P. (1978). Job design and the psychology of boredom. Paper presented at the 19th International Congress of Applied Psychology, Munich, West Germany.

- Guilford, J. P. (1959). Personality. New York: McGraw-Hill.
- Guilford, J. P. (1975). Factors and factors of personality. Psychological Bulletin, 82, 802-814.
- Guilford, J. P., Christenson, P. R., Bond, N. A., Jr., & Sutton, M. A. (1954). A factor analysis study of human interests. Psychological Monographs, 68(4, Whole No. 375).
- Guion, R. M., & Gottier, R. F. (1965). Validity of personality measures in personnel selection. Personnel Psychology, 18, 135-164.
- Gulas, I., & King, F. W. (1976). On the question of pre-existing personality differences between users and non-users of drugs. Journal of Psychology, 92, 65-69.
- Haan, N. (1977). Coping and defending. New York: Academic Press.
- Hackett, T. P., & Weisman, A. D. (1964). Reactions to the imminence of death. In G. H. Grosser, H. Wechsler, & M. Greenblat (Eds.), The threat of impending disaster. Cambridge, MA: MIT Press.
- Hale, H. B., Duffy, J. C., Ellis, J. P., & Williams, E. W. (1965). Flying stress in relation to flying proficiency. Aerospace Medicine, 36, 112-116.
- Hale, H. B., Hartman, B. O., Harris, D. A., Williams, E. W., Miranda, R. E., Hosenfeld, J. M., & Smith, B. N. (1972). Physiologic stress during 50-hour double-crew mission in C-141 aircraft. Aerospace Medicine, 43, 293-299.
- Hale, H. B., Storm, W. F., Goldzieher, J. W., Hartman, B. O., Miranda, R. E., & Hosenfeld, J. M. (1973). Physiological cost in 36- and 48-hour simulated flights. Aerospace Medicine, 44, 871-881.
- Hall, D. T., & Gordon, F. E. (1973). Career choices of married women: Effects of conflict, role behavior, and satisfaction. Journal of Applied Psychology, 58, 42-48.
- Hammer, T. H., & Vardi, Y. (1981). Locus of control and career self-management among nonsupervisory employees in industrial settings. Journal of Vocational Behavior, 18, 13-29.
- Hampton, P. J. (1953). The development of a personality questionnaire for drinkers. Genetic Psychology Monographs, 48, 55-115.
- Hansen, J. R., Stoa, K. F., Blix, A. S., & Ursin, H. (1978). Urinary levels of epinephrine and norepinephrine in parachutist trainees. In H. Ursin, E. Baade, & S. Levine (Eds.), Psychobiology of stress: A study of coping men. New York: Academic Press.

- Harvey, J. H., Barnes, R. D., Sperry, D. L., & Harris, B. (1974). Perceived choice as a function of internal-external locus of control. Journal of Personality, 42, 437-452.
- Hathaway, S. R., & McKinley, J. C. (1940). A multiphasic personality schedule (Minnesota): Construction of the schedule. Journal of Psychology, 10, 249-254.
- Haynes, S. G., Levine, S., Scotch, N., Feinleib, M., & Kannel, W. B. (1978). The relationship of psychosocial factors to coronary heart disease in the Framingham study. American Journal of Epidemiology, 107, 384-402.
- Hill, H. E. (1962). The social deviant and initial addiction to narcotics and alcohol. Quarterly Journal of Studies on Alcohol, 23, 562-582.
- Hill, H. E., Haertzen, C. A., & Davis, H. (1962). An MMPI factor analytic study of alcoholics, narcotic addicts and criminals. Quarterly Journal of Studies on Alcohol, 23, 411-431.
- Hill, H. E., Haertzen, C. A., & Glaser, R. (1960). Personality characteristics of narcotic addicts as indicated by the MMPI. Journal of General Psychology, 62, 127-139.
- Hodges, W. F. (1968). Effects of ego threat and threat of pain on state anxiety. Journal of Personality and Social Psychology, 8, 364-372.
- Hodo, G. L., & Fowler, R. D. (1976). Frequency of MMPI two-point codes in a large alcoholic sample. Journal of Clinical Psychology, 32, 487-489.
- Hoffman, H., Loper, R. G., & Kammeier, M. L. (1974). Identifying future alcoholics with MMPI alcoholism scales. Quarterly Journal of Studies on Alcohol, 35, 490-498.
- Hogan, R. (1983). Personality theory, personality assessment, and Army recruit selection. Concept paper submitted to ARI Task 2.
- Holland, J. L. (1966). The psychology of vocational choice. Waltham, MA: Blaisdell.
- Holland, J. L. (1973). Making vocational choices: A theory of careers. Englewood Cliffs, NJ: Prentice-Hall.
- Holland, J. L., Magoon, T. M., & Spokane, A. R. (1981). Counseling psychology: Career interventions, research and theory. Annual Review of Psychology, 32, 279-305.

- Holmes, T. H., & Rahe, R. H. (1967). The social readjustment scale. Journal of Psychosomatic Research, 11, 213-218.
- Horvath, S. M., & Freedman, A. (1947). The influence of cold upon the efficiency of man. Journal of Aviation Medicine, 18, 158-164.
- House, J. S. (1974). Occupational stress and coronary heart disease: A review and theoretical integration. Journal of Health and Social Behavior, 15, 12-27.
- Houston, B. K., & Hodges, W. F. (1970). Situational denial and performance under stress. Journal of Personality and Social Psychology, 16, 726-730.
- Hoyt, D. P., & Sedlacek, G. M. (1958). Differentiating alcoholics from normals and abnormals with the MMPI. Journal of Clinical Psychology, 14, 69-74.
- Hunter, J. E., Schmidt, F. L., & Jackson, G. B. (1982). Meta-analysis: Cumulating research findings across studies. Beverly Hills, CA: Sage.
- Iampietro, P. F., Chiles, W. D., Higgins, E. A., & Gibbons, H. L. (1969). Complex performance during exposure to high temperature. Aerospace Medicine, 40, 1331-1335.
- Insel, P. M., & Moos, R. H. (1974). Psychological environment: Expanding the scope of human ecology. American Psychologist, 29, 179-187.
- Isherwood, J., Adam, K. S., & Hornblow, A. R. (1982). Readjustment, desirability, expectedness, mastery and outcome dimensions of life stress suicide attempt and auto-accident. Journal of Human Stress, 2, 11-18.
- Ivancevich, J. M., & Matteson, M. T. (1980). Stress and work: A managerial perspective. Glenview, IL: Scott, Foresman and Company.
- Jacobs, S. C., Prusoff, B. A., & Paykel, E. S. (1974). Recent life events in schizophrenia and depression. Psychological Medicine, 4, 444-453.
- Janis, I. L., & Feshback, S. (1953). Effects of fear-arousing communications. Journal of Abnormal Social Psychology, 48, 78-92.
- Jansen, G. (1961). Adverse effects of noise on iron and steel workers. Stahl und Eisen, 81, 217-220 (cited in Jones, 1983).
- Jarvis, L. G., Simnegar, R. R., & Traweck, A. R. (1975). An MMPI comparison of USAF groups identified as drug users. Psychological Reports, 37, 1339-1345.
- Jenkins, C. D. (1971). Psychologic and social precursors of coronary disease. New England Journal of Medicine, 284, 307-317.



- Jenkins, C. D., Hurst, M. W., & Rose, R. M. (1979). Life changes: Do people really remember? Archives of General Psychiatry, 36, 379-384.
- Jerison, H. J. (1959). Effects of noise on human performance. Journal of Applied Psychology, 43, 96-101.
- Jessor, R. (1976). Predicting time of onset of marijuana use: A developmental study of high school youth. Journal of Consulting and Clinical Psychology, 44, 125-134.
- Jessor, R., & Jessor, S. L. (1975). Adolescent development and the onset of drinking: A longitudinal study. Journal of Studies on Alcohol, 36, 27-51.
- Johansson, G., Aronsson, G., & Lindstrom, B. O. (1978). Social psychological and neuroendocrine stress reactions to highly mechanized work. Ergonomics, 21, 583-599.
- Johnson, J. M., & Sarason, I. G. (1978). Life stress, depression and anxiety: Internal-external control as a moderator variable. Journal of Psychosomatic Research, 22, 205-208.
- Jones, D. (1983). Noise. In R. Hockey (Ed.), Stress and fatigue in human performance. New York: J. Wiley & Sons.
- Jones, M. C. (1968). Personality correlates and antecedents of drinking patterns in adult males. Journal of Consulting and Clinical Psychology, 32, 2-12.
- Jones, M. C. (1971). Personality antecedents and correlates of drinking patterns in women. Journal of Consulting and Clinical Psychology, 36, 61-69.
- Jonsson, A. (1978). Noise as a possible risk factor for raised blood pressure in man. Journal of Sound and Vibration, 59, 119-121.
- Julian, J. W., & Katz, S. B. (1968). Internal versus external control and the value of reinforcement. Journal of Personality and Social Psychology, 8, 89-94.
- Kahn, R. L., Wolfe, D. M., Quinn, R. P., Snoek, J. D., & Rosenthal, R. A. (1964). Organizational stress: Studies in role conflict and ambiguity. New York: J. Wiley & Sons.
- Kamp, J. K., & Hough, L. M. (1984). Personality assessment. Unnumbered research report. Minneapolis, MN: Personnel Decisions Research Institute.
- Katz, D., & Kahn, R. L. (1966, 1978). The social psychology of organizations. New York: J. Wiley & Sons.

- Kemery, E. R., Bedeian, A. G., Mossholder, K. W., & Touliatos, J. (1984). Outcomes of role stress: A multi-sample constructive replication. Manuscript in preparation.
- Kobasa, S. C., Maddi, S. R., & Kahn, S. (1982). Hardiness and health: A prospective study. Journal of Personality and Social Psychology, 42, 168-177.
- Kobasa, S. C., & Puccetti, M. C. (1983). Personality and social resources in stress resistance. Journal of Personality and Social Psychology, 45, 839-850.
- Kranitz, L. (1972). Alcoholics, heroin addicts and non-addicts: Comparison on the MacAndrew Alcoholism Scale of the MMPI. Quarterly Journal of Studies on Alcohol, 33, 807-809.
- Kurtines, W., Hogan, R., & Weiss, D. (1975). Personality dynamics of heroin use. Journal of Abnormal Psychology, 84, 87-89.
- Lachar, D., Sparks, J. C., Larsen, R. H., & Bisbee, C. T. (1974). Psychometric prediction of behavioral criteria of adaptation for USAF basic trainees. Journal of Community Psychology, 2, 268-277.
- Lamb, D. H. (1976). On the distinction between psychological and physical stressors. Psychological Reports, 38, 797-798.
- Lazarus, R. S. (1966). Psychological stress and the coping process. New York: McGraw-Hill.
- Lazarus, R. S. (1980). The stress and coping paradigm. In C. Eisendorfer, D. Cohen, A. Kleiman, & P. Maxim (Eds.), Theoretical Bases for Psychopathology. New York: Spectrum.
- Lefcourt, H. M., Martin, R. A., & Saleh, W. E. (1984). Locus of control and social support: Interactive moderators of stress. Journal of Personality and Social Psychology, 47, 378-389.
- Lefcourt, H. M., Miller, R. S., Ware, E. E., & Sherk, D. (1981). Locus of control as a modifier of the relationship between stressors and moods. Journal of Personality and Social Psychology, 41, 357-369.
- Levenson, H., Hirschfield, M. A., Hirschfield, M. D., & Dzuby, B. (1983). Recent life events and accidents. Journal of Human Stress, 2, 4-11.
- Levenson, H., Hirschfield, M. L., & Hirschfield, A. H. (1980). Industrial accidents and recent life events. Journal of Occupational Medicine, 22, 53-57.
- Lewin, K. (1935). A dynamic theory of personality. New York: McGraw-Hill.

- Liddel, W. W., & Slocum, J. W. (1976). The effects of individual role compatibility upon group performance: An extension of Schutz's FIRO theory. Academy of Management Journal, 19, 413-426.
- Lin, N., Ensel, W. M., Simeone, R. S., & Kuo, W. (1979). Social support, stressful life events and illness: A model and an empirical test. Journal of Health and Social Behavior, 20, 108-109.
- Lloyd, C., Alexander, A. A., Rice, D. G., & Greenfield, N. S. (1980). Life events as predictors of academic performance. Journal of Human Stress, 6, 15-20.
- Locke, E. A. (1976). Nature and causes of job satisfaction. In M. D. Dunnette (Ed.), Handbook of Industrial and Organizational Psychology. Chicago: Rand-McNally.
- Lockhart, J. M. (1966). Effects of body and hand cooling on complex manual performance. Journal of Applied Psychology, 50, 57-59.
- London, H., Schubert, D. S. P., & Washburn, D. (1972). Increase of autonomic arousal by boredom. Journal of Abnormal Psychology, 80, 29-36.
- Loper, R. G., Kammeier, M. L., & Hoffman, H. (1973). MMPI characteristics of college freshmen males who later became alcoholics. Journal of Abnormal Psychology, 82, 159-162.
- Lykken, D. (1981). A tremor in the blood. New York: McGraw-Hill.
- MacAndrew, C. (1965). The differentiation of male alcoholic outpatients from nonalcoholic psychiatric outpatients by means of the MMPI. Quarterly Journal of Studies on Alcohol, 26, 238-246.
- MacAndrew, C., & Geertsma, R. H. (1964). A critique of alcoholism scales derived from the MMPI. Quarterly Journal of Studies on Alcohol, 25, 68-76.
- Mackworth, N. H. (1950). Researches on the measurement of human performance (Medical Research Council Special Report No. 268). London: HMSO.
- MacPherson, R. K. (1974). Thermal stress and thermal comfort. In Man under stress. Taylor and Francis, Ltd.
- Magnusson, D., & Endler, N. S. (1977). Personality at the crossroads: Current issues in interactional psychology. Hillsdale, NJ: Erlbaum.
- Marchbanks, V. H., Hale, H. B., & Ellis, J. (1963). Stress response of pilots flying 6-hour overwater missions in F-100 and F-104 aircraft. Aerospace Medicine, 34, 15-18.

- Margolis, B. L., Kroes, W. H., & Quinn, R. P. (1974). Job stress: An unlisted occupational hazard. Journal of Occupational Medicine, 16, 659-661.
- Marshall, S. L. A. (1947). Island victory. The Infantry Journal, Washington.
- McArthur, C. (1954). Long-term validity of the Strong Interest Test in two subcultures. Journal of Applied Psychology, 38, 346-354.
- McBain, W. N. (1970). Arousal, monotony and accidents in line driving. Journal of Applied Psychology, 54, 509-519.
- McCormick, E. J., Jeanneret, P. R., & Mecham, R. C. (1972). A study of the job characteristics and job dimensions as based on the Position Analysis Questionnaire. Journal of Applied Psychology, 56, 347-367.
- McDowell, R. J. S., & Wells, H. M. (1927). The physiology of monotony. British Medical Journal, 1, 414-415.
- McKinley, J. C., & Hathaway, S. K. (1944). The MMPI: V. Hysteria, hypomania and psychopathic deviate. Journal of Applied Psychology, 28, 153-174.
- McMichael, A. J. (1978). Personality, behavioral, and situational modifiers of work stressors. In C. Cooper & R. Payne (Eds.), Stress at work (pp. 127-147). New York: J. Wiley & Sons.
- Mechanic, D. (1962). Students under stress. New York: Free Press.
- Menninger, K. A. (1954). Regulatory devices of the ego under major stress. International Journal of Psychoanalysis, 35, 412-420.
- Miller, W. R. (1976). Alcoholism scales and objective assessment methods: A review. Psychological Bulletin, 83, 649-674.
- Mills, R. T., & Krantz, D. S. (1979). Information, choice and reactions to stress: A field experiment in a blood bank and laboratory analogue. Journal of Personality and Social Psychology, 37, 608-620.
- Mischel, W. (1973). Toward a cognitive social learning reconceptualization of personality. Psychological Review, 80, 252-283.
- Moore, R. A. (1972). The diagnosis of alcoholism in a psychiatric hospital: A trial of the Michigan Alcoholism Screening Test (MAST). American Journal of Psychiatry, 128, 1565-1569.
- Moos, R. H. (1973). Conceptualizations of human environments. American Psychologist, 28, 652-665.

- Moos, R. H. (1981). Work environment scale manual. Palo Alto, CA: Consulting Psychologists Press.
- Morris, L. W., & Liebert, R. M. (1973). Effects of negative feedback, threat of shock, and level of trait anxiety on the arousal of two components of anxiety. Journal of Counseling Psychology, 20, 321-326.
- Motowidlo, S. J., Packard, J. S., & Manning, M. R. (1984). Occupational stress: Its antecedents and consequences for job performance. Unpublished manuscript, Pennsylvania State University.
- Murray, H. A. (1938). Explorations in personality. New York: Oxford University Press.
- Nail, R. L., Gunderson, E. K., Kolb, D., & Butler, M. (1975). Drug histories of Navy amnesty cases. Military Medicine, 140, 172-178.
- Neiner, A. G., & Owens, W. A. (1982). Relationships between two sets of biodata with seven years separation. Journal of Applied Psychology, 67(2), 146-150.
- Noel, G. R., Dimond, R. C., Earll, J. M., & Frantz, A. G. (1976). Prolactin, thyrotropin and growth hormone release during stress associated with parachute jumping. Aviation, Space and Environmental Medicine, 543-547.
- Norman, W. T. (1963). Personality measurement, faking and detection: An assessment method for use in personnel selection. Journal of Applied Psychology, 48, 225-241.
- Norman, W. T. (1963). Toward an adequate taxonomy of personality attributes: Replicated factor structure in peer nomination personality ratings. Journal of Abnormal and Social Psychology, 66, 574-583.
- Nuckolls, C. G., Cassel, J., & Kaplan, B. H. (1972). Psycho-social assets, life crises and the prognosis of pregnancy. American Journal of Epidemiology, 95, 431-441.
- O'Hanlon, J. F., Jr. (1965). Adrenaline and noradrenaline: Relation to performance in a visual vigilance task. Science, 150, 507-509.
- O'Hanlon, J. F., Jr., Horvath, S. M. (1973). Interrelationships among performance, circulating concentrations of adrenaline, noradrenaline, glucose, and the free fatty acids in men performing a monitoring task. Psychophysiology, 10, 251-259.
- Ohrstrom, E., & Bjorkman, M. (1978). Medical symptoms in noisy industries. Journal of Sound and Vibration, 59, 115-118.
- Olson, R. W. (1964). MMPI sex differences in narcotic addicts. Journal of General Psychology, 71, 257-266.

- Owens, W. A. (1968). Toward one discipline of scientific psychology. American Psychologist, 23, 782-785.
- Parkes, K. R. (1984). Locus of control, cognitive appraisal, and coping in stressful episodes. Journal of Personality and Social Psychology, 46, 655-668.
- Paykel, E. S. (1979). Causal relationship between clinical depression and life events. In J. E. Barrett (Ed.), Stress and mental disorder. New York: Prodist.
- Paykel, E. S., Myers, J. K., Dienes, M. N., Klerman, G. L., Lindenthal, J. J., & Pepper, M. P. (1969). Life events and depression. Archives of General Psychiatry, 21, 753-760.
- Paykel, E. S., Prusoff, B. A., & Myers, J. K. (1975). Suicide attempts and recent life events. Archives of General Psychiatry, 32, 322-333.
- Paykel, E. S., Prusoff, B. A., & Uhlenhuth, E. H. (1971). Scaling of life events. Archives of General Psychiatry, 25, 340-347.
- Pearlin, L. I., & Schooler, C. (1978). The structure of coping. Journal of Health and Social Behavior, 19, 2-21.
- Peters, L. H., O'Connor, E. J., & Rudolf, C. J. (1980). The behavioral and affective consequences of performance relevant situational variables. Organizational Behavior and Human Performance, 25, 79-96.
- Peters, T. J., & Waterman, R. H., Jr. (1982). In search of excellence. New York: Harper & Row.
- Plag, J. A., & Goffman, J. M. (1973). Characteristics of Naval recruits with histories of drug abuse. Military Medicine, 138, 354-359.
- Porter, L. W., & Lawler, E. E., III. (1965). Properties of organization structure in relation to job attitudes and job behavior. Psychological Bulletin, 64(1), 23-51.
- Poulton, E. C. (1976). Arousing environmental stresses can improve performance, whatever people say. Aviation, Space, and Environmental Medicine, 47(2), 1193-1204.
- Poulton, E. C., Hitchings, R. N., & Brooke, R. B. (1965). Effect of cold and rain upon vigilance of lookouts. Ergonomics, 8, 163-167.
- Price, V. A. (1984). The Type A behavior pattern: A cognitive social learning model. New York: Academic Press.

- Provins, K. A., & Clarke, R. S. J. (1960). The effect of cold on manual performance. Journal of Occupational Medicine, 2, 169-176.
- Ramsey, J. (1983). Heat and cold. In R. Hockey (Ed.), Stress and fatigue in human performance. New York: J. Wiley & Sons.
- Roe, A. (1956). The psychology of occupation. New York: J. Wiley & Sons.
- Ross, C., & Mirowsky, J. (1979). A comparison of life-event-weighting schemes. Journal of Health and Social Behavior, 20, 166-177.
- Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcements. Psychological Monographs: General and Applied, 80(1, Whole No. 609).
- Rotter, J. B. (1975). Some problems and misconceptions related to the construct of internal versus external control of reinforcement. Journal of Consulting and Clinical Psychology, 43, 56-67.
- Rounds, J. B., Jr. (1981). The comparative and combined utility of need and interest data in the prediction of job satisfaction. Unpublished doctoral dissertation, University of Minnesota.
- Sackett, P. R., & Harris, M. M. (1984). Honesty testing for personnel selection: A review and critique. Personnel Psychology 37, 221-245.
- Saldanha, E. (1955). An investigation into the effects of prolonged and exacting visual work (Report No. 243/55). Medical Research Council, Applied Psychology Unit.
- Sales, S. M. (1969). Differences among individuals in affective, behavioral, biochemical and physiological responses to variations in workload. Dissertation Abstracts International, 30(5-B), 2407.
- Sanders, A. F. (1961). The influence of noise on two discrimination tasks. Ergonomics, 4, 253-258.
- Sandler, I. N., & Lakey, B. (1982). Locus of control as a stress moderator: The role of control perceptions and social support. American Journal of Community Psychology, 10, 65-80.
- Schneider, B. (1984). A taxonomy of organizational climate. Unpublished manuscript. Minneapolis, MN: Personnel Decisions Research Institute.
- Schooler, J. E., White, E. H., & Cohen, C. P. (1972). Drug abusers and their clinic-patient counterparts: A comparison of personality dimensions. Journal of Consulting and Clinical Psychology, 39, 9-14.

- Schuler, R. S. (1982). An integrative transactional process model of stress in organizations. Journal of Occupational Behavior, 3(1), 5-19.
- Sells, S. (1963). Dimensions of stimulus situations which account for behavior variance. In S. Sells (Ed.), Stimulus determinants of behavior. New York: Ronald Press.
- Selye, H. (1956). The stress of life. New York: McGraw-Hill.
- Selye, H. (1983). The stress concept: Past, present, and future. In C. L. Cooper (Ed.), Stress research: Issues for the eighties. New York: J. Wiley & Sons.
- Selzer, M. L. (1971). The Michigan Alcoholism Screening Test: The quest for a new diagnostic instrument. American Journal of Psychiatry, 127, 1653-1658.
- Selzer, M. L., Vinokur, A., & van Rooijen, L. (1975). A self-administered short Michigan Alcoholism Screening Test (MAST). Journal of Studies on Alcohol, 36, 117-126.
- Shadish, W. R., Jr., Hickman, D., & Arrick, M. C. (1981). Psychological problems of spinal cord injury patients: Emotional distress as a function of time and locus of control. Journal of Consulting and Clinical Psychology, 49, 297.
- Shane, W. P., & Slinde, K. (1968). Continuous ECG recordings during free-fall parachuting. Aerospace Medicine, 39, 597-602.
- Sharit, J., & Salvendy, G. (1982). Occupational stress: Review and appraisal. Human Factors, 24, 129-162.
- Shaw, J. B., & Riskind, J. H. (1983). Predicting job stress using data from the Position Analysis Questionnaire. Journal of Applied Psychology, 68(2), 253-261.
- Shedletsky, R., & Enders, N. S. (1974). Anxiety: The state-trait model and the interaction model. Journal of Personality, 42, 511-527.
- Sheldon, W. H. (1940). The varieties of human physique: An introduction to constitutional psychology. New York: Harper & Row.
- Sherrod, D. R., & Downs, R. (1974). Environmental determinants of attention: The effects of stimulus overload and perceived control on helping. Journal of Experimental Social Psychology, 13, 14-27.
- Stall, G. L., & Anderson, D. M. (1955). Fatigue during prolonged performance on a simple compensatory tracking task. Quarterly Journal of Experimental Psychology, 7, 159-165.



- Siegel, J. M., & Steele, C. M. (1980). Environmental distraction and interpersonal judgments. British Journal of Social and Clinical Psychology, 19, 23-32.
- Spacapan, S., & Cohen, S. (1983). Effects and aftereffects of stressor expectations. Journal of Personality and Social Psychology, 45, 1243-1254.
- Spector, P. E. (1982). Behavior in organizations as a function of employee's locus of control. Psychological Bulletin, 91, 482-497.
- Spielberger, C. D. (1972). Anxiety as an emotional state. In C. D. Spielberger (Ed.), Anxiety: Current trends in theory and research (Vol. 1). New York: Academic Press.
- Stamburgh, C. J. (1950). An investigation of certain individual differences under the stress of high intensity sound. Unpublished doctoral dissertation, Pennsylvania State College. Cited in R. Plutchik, The effects of high intensity intermittent sound on performance, feeling, and physiology. Psychological Bulletin, 56, 131-151.
- Stern, G. (1970). People in context: Measuring person-environment congruence in education and industry. New York: J. Wiley & Sons.
- Stokels, D. (1978). Environmental psychology. Annual Review of Psychology, 29, 253-295.
- Stokes, J. P. (1974). Personality traits and attitudes and their relationships to student drug using behavior. International Journal of the Addictions, 9, 267-287.
- Stromme, S. B., Wikeby, P. C., Blix, A. S., & Ursin, H. (1978). Additional heart-rate. In H. Ursin, E. Baade, & S. Levine (Eds.), Psychobiology of stress: A study of coping men. New York: Academic Press.
- Strong, E. K. (1943). Vocational interests of men and women. Stanford, CA: Stanford University Press.
- Suls, J., & Mullen B. (1981). Life change and psychological distress: The role of perceived control and desirability. Journal of Applied Psychology, 11, 379-389.
- Sundberg, N. D. (1977). Assessment of persons. New Jersey: Prentice-Hall.
- Sutker, P. B. (1971). Personality differences and sociopathy in heroin addicts and nonaddict prisoners. Journal of Abnormal Psychology, 78, 247-251.

- Sutker, P. B., & Allain, A. N. (1973). Incarcerated and street heroin addicts: A personality comparison. Psychological Reports, 32, 243-246.
- Tache, J., & Selye, H. (1978). On stress and coping mechanisms. In C. D. Spielberger & I. G. Sarason (Eds.), Stress and anxiety (Vol. 5). New York: J. Wiley & Sons.
- Tanck, R. H., & Robbins, P. R. (1979). Assertiveness, locus of control, and coping behaviors used to diminish tension. Journal of Personality Assessment, 43, 396-400.
- Teichner, W. H., & Wehrkamp, R. F. (1954). Visual-motor performance as a function of short duration ambient temperature. Journal of Experimental Psychology, 47, 447-450.
- Thackray, R. I. (1981). The stress of boredom and monotony: A consideration of the evidence. Psychosomatic Medicine, 43, 165-174.
- Thackray, R. I., Bailey, J. P., & Touchstone, R. M. (1977). Physiological, subjective and performance correlates of repeated boredom and monotony while performing a simulated radar control task. In R. R. Mackie (Ed.), Vigilance: Theory, operational performance and physiological correlates. New York: Plenum Press.
- Theorell, T. (1974). Life events before and after the onset of premature myocardial infarction. In B. S. Dohrenwend and B. P. Dohrenwend (Eds.), Stressful life events: Their nature and effects (pp. 101-118). New York: J. Wiley & Sons.
- Thurstone, L. L. (1931). A multiple factor study of vocational interests. Personnel Journal, 10, 198-205.
- Tompas, S. (1981, August 3). More employers attempt to catch a thief by giving job applicants honesty exams. The Wall Street Journal, Section 2, p. 1.
- Tupes, E. C., & Christal, R. E. (1961). Recurrent personality factors based on trait ratings (ASD-TR-61-97). Lackland Air Force Base, TX: Aeronautical Systems Division, Personnel Laboratory.
- Tuttle, W. C., & Davis, J. G. (1978). Development of an automated stress/duress detection system (Phase I: Technical and physiological studies). Albuquerque, NM: Sandia Laboratories.
- Van Harrison, R. (1978). Person-environment fit and job stress. In C. L. Cooper & R. Payne (Eds.), Stress at work (pp. 175-203). New York: J. Wiley & Sons.

- Vinokur, A., & Selzer, M. L. (1975). Desirable versus undesirable life events: Their relationship to stress and mental disease. Journal of Personality and Social Psychology, 32, 329-339.
- Walker, N. K., & Burkhardt, J. F. (1965). The combat effectiveness of various human operator controlled systems. Proceedings of the 17th U. S. Military Operations Research Symposium.
- Walsh, W. B. (1979). Vocational behavior and career development, 1978: A review. Journal of Vocational Behavior, 15, 119-154.
- Watson, R. I. (1978). The great psychologists. Philadelphia, PA: Lippincott.
- Weitzman, E. D., & Ursin, H. (1978). Growth hormone. In H. Ursin, E. Baade, & S. Levine (Eds.), Psychobiology of stress: A study of coping men. New York: Academic Press.
- Wells, J. A. (1982). Objective job conditions, social support, and perceived stress among blue collar workers. Journal of Occupational Behavior, 3, 79-94.
- Wenzel, H. G., & Ilmarinen, R. (1977). Effects of environmental heat on performance and some physiological responses of a man during a psychomotor task. Journal of Human Ergology, 6(2), 139-152.
- Wernimont, P. R., & Campbell, J. P. (1968). Signs, samples, and criteria. Journal of Applied Psychology, 52(5), 372-376.
- Weston, H. C., & Adams, S. (1932). The effect of noise on the performance of weavers (Industrial Health Research Board Report No. 65, Part 11). London: HMSO.
- Weston, H. C., & Adams, S. (1935). The performance of weavers under varying conditions of noise (Industrial Health Research Board Report No. 65). London: HMSO.
- Wiggins, J. S. (1973). Personality and predictions: Principles of personality assessment. Reading, MA: Addison-Wesley.
- Wilkinson, R. T. (1963). Interaction of noise with knowledge of results and sleep deprivation. Journal of Experimental Psychology, 66, 332-337.
- Willerman, L. (1979). The psychology of individual and group differences. San Francisco: Freeman.
- Wolk, S., & DuCette, J. (1974). Intentional performance and incidental learning as a function of personality and task dimension. Journal of Personality and Social Psychology, 29, 90-101.

- Wyatt, S., Fraser, J. A., & Stock, F. G. L. (1929). The effects of monotony on work (IFRB Report No. 56). London: HMSO.
- Wyatt, S., Landon, J. N., & Stock, F. G. L. (1932). Fatigue and boredom in repetitive work (IFRB Report No. 77). London: HMSO.
- Yerkes, R. M., & Dodson, J. D. (1908). The relation of strength of stimulus to rapidity of habit formation. Journal of Comparative Neurology and Psychology, 18, 459-482.
- Zubek, J. P. (1968). Urinary excretion of adrenaline and noradrenaline during prolonged immobilization. Journal of Abnormal Psychology, 73, 223-225.
- Zubek, J. P., & Schutte, W. (1966). Urinary excretion of adrenaline and noradrenaline during prolonged perceptual deprivation. Journal of Abnormal Psychology, 71, 328-334.
- Zuckerman, M., Sola, S., Masterson, J., & Angelone, J. V. (1975). MMPI patterns in drug abusers before and after treatment in therapeutic communities. Journal of Consulting and Clinical Psychology, 43, 286-296.

APPENDIX  
SITE VISIT SUPPORTING INFORMATION

ANNEX 1  
FEDERAL BUREAU OF INVESTIGATION

Interviewee: SSA Robert E. Yates  
Institutional Research & Development Unit  
FBI Academy  
Quantico VA 22135

Interviewer: Hough

Date: 6 June 1984

Selection

The FBI receives applications from 6,000 - 10,000 people per year; they accept about 450 per year. To be considered, candidates must:

- a. have a bachelor's degree
- b. be between ages 23-35

Then one must "qualify", i.e., pass a knowledge test in one's specialty area. The five areas are:

- . science
- . law
- . accounting
- . language
- . modified four-year degree and experience

According to Yates, you qualify in these areas but you don't necessarily get selected in those areas. There are two other categories, sex and race, in which one might be selected. Prior to 1972, Yates said there were no women special agents and few, if any, minorities. They are now taking special care to select them. (Later in the interview Yates said there are no cut-off scores for these qualifying categories.)

Yates conducted a job analysis using the PAQ. He identified seven personal characteristics that were important to the job. They are: oral communication; motivation/commitment; impact; initiative; work standards; independence; and range of interests. He and a colleague created an attitude test which he called the Special Agent Entrance Test. He also selected some Psych. Corp tests and called them the Cognitive Functions Test. According to Yates, these have good concurrent validity with training grades.

He also modified the interview procedure. He developed an interview board consisting of three people in each office who conducted the interview. The tests were used to iden-

tify the top ten and then these people were interviewed. He said management wanted a specific cut-off but that he persuaded them that he couldn't identify the point at which persons scoring lower would not be able to do the job.

Yates said the weighting of the interview, Cognitive Functions and Special Agent Entrance Test (the attitude questionnaire) are 55 points, 25 points, and 20 points respectively.

Note: At the time I didn't think to ask about this but during the interview Yates said that headquarters specified the number of people to be hired. I understood this was nation-wide. Perhaps it is field office specific. If it isn't done according to the needs of a specific field office, the statement that the top ten are interviewed doesn't make sense. If it were nationwide, each office would be told how many from their area were in the top ten, which would also be unreasonable because approximately 450 special agents are selected each year. Another piece of information that suggests that each office hires because of that office's need is that, after training, newly hired special agents now return to the field office where they were hired. Previously, after training, newly hired special agents were immediately transferred anywhere. Now, they spend a couple years in the office where they were hired.

Another step in the selection procedure is the background interview. This appears to be used strictly to screen out applicants because Yates did not give it (or the bachelor degree, age, and specialty area knowledge test requirements) a weight. According to Yates, anything derogatory is a reason for screening someone out. In the background investigation they are looking for:

- . evidence of a criminal record,
- . anything that would not allow them to get a security clearance,
- . negative CIA check,
- . unreported travel abroad,
- . unaccounted for periods of time,
- . any pattern of trouble,
- . information about behavior at educational institutions,

- . sincerity,
- . opinions of neighbors, and
- . opinions of references and others who would provide a more balanced view.

Another part of the selection process is a medical exam. A medical doctor certifies that the person is capable of strenuous physical activity. There is also a vision requirement. Both eyes have to be correctable to 20/20. The uncorrected worse eye can be no worse than 20/200, the other eye no worse than 20/100. Even this is not set in stone. Recently, Webster made an exception to hire a one-eyed Congressional Medal of Honor person.

At the field office, a pre-employment physical fitness exam is given. It consists of 1.5 mile walk/run, push-ups, sit-ups, and body/fit. On a scale of 1-5, one has to attain a 2 in each of the four categories. They don't disqualify people on this basis, but they won't schedule training until they score a 2 in each category. Once in training, those people with a score of 10 or less are automatically placed on a remedial program.

Throughout the selection process, the FBI is looking for people who :

- . are self-starters, have initiative,
- . set their own work standards at a high enough standard,
- . have interpersonal ability/presence (for interviewing),
- . have a wide range of interests (may need to talk to a very, very high level person and a prostitute all in the same day),
- . are versatile,
- . are tolerant of other approaches or life styles
- . are persuasive (need to obtain information from people who are not necessarily interested in providing or revealing the information),
- . have good/accurate memories (need to recall and write down informatin obtained in such encounters),
- . are sincere

## Monitoring

Training is also a period during which people are screened. First, a physical fitness test is administered. One part of this test is a trigger pull test. It is the number of times a person can pull a trigger, using a standard issue, in 30 seconds. If they can't pull the trigger 40 or more times in that time period, there is a very high probability that the person will not qualify on the firearms test during training. One must attain this minimum number of trigger pulls before enrolling in the training. Prior to this test, women were disproportionately failing training because they weren't qualifying on the firearms part. This trigger pull test has cut down substantially the number of women failing training.

Another part of the physical fitness test consists of a two-mile run, shuttle run, push-ups, pull-ups, and sit-ups. There are different scales for men and women. They use the entry level score to predict an individual's approximate score at six weeks into training. They administer the five-part physical fitness test again at six weeks to evaluate an individual's progress and to predict an individual's approximate score at twelve weeks. According to Yates, the job analysis did not indicate that physical fitness was directly job related, so they now take an approach that is less black and white than before, though they must attain a minimum standard of at least one positive score in each category, and a minimum of 15 points. Scores range from -5 to +10 in each category. This is not a difficult standard and is, apparently, less stringent than before. If a person does not attain his or her predicted score range, it triggers a review board. (The review board is described later.) It is considered evidence of motivation (or lack of) and one's work standards. People who score low on the fitness test at any time, or score below their predicted score range are placed on remedial programs. (Attachment 1 is a copy of the "New Agents Physical Fitness Tests and Rating Scale" for men and women.)

Another part of the screening during training relates to minimum course grades. One must attain an 85 or above to pass a test and candidates must pass all tests. Previously, if a person received less than 85 on two tests, they were asked to resign. Now, the FBI has a gray area, scores of 80-85. If someone receives two scores in this range, they go before the review board. (Two scores below 80 and the candidate is immediately asked to resign.) The review board tries to identify what the problem is, perhaps it's poor study habits, and develop an approach for overcoming the



problem. Candidates still must obtain 85 or better on all tests (they have to retake a test if they get less than 85). According to Yates, the review board has had a significant impact on the retention of minority applicants. He has data from before and after implementation of the review board and blacks are completing training in higher percentages than before. Yates said the primary reason for blacks not completing training was poor grades.

The review board was introduced in 1980. It consists of three officials (plus Yates who sits in) who meet to resolve any candidate training problems. Their objective is to help candidates complete training without lowering the quality of FBI agents. They obtain information from instructors, counselors, and the individual and then design remedial programs tailored to the individual. If the individual does not show improvement, they are asked to resign. Other recommendations include (a) staying in the program longer; and (b) recycling the individual through another training class. Sometimes personal difficulties (death, etc.) with one's family back home justify recycling the individual through another program. The review board documents the case and writes a summary. The board's recommendations are always reviewed by the Assistant Director, Jim McKinzie, who has the final decision.

Another way, not mentioned above, of triggering a review board for an individual is "demeanor". If anyone has serious reservations about a person and can document the case, a review is conducted.

Once training is completed, each new agent works side-by-side with a "field training agent", for 20 work-days. This field training agent evaluates the individual and at the end of the 20 work days makes a recommendation about whether the individual can work alone.

Yates said that the present FBI system is much more supportive of the individual both during training and once on the job. In addition to the physical fitness testing approach, the marginal failure range for course test scores, the individualized remedial programs, and the review board, the FBI now has "field counselors" in the dorms to deal with personal problems during training, a psychological services program for agents, and, most recently, a structured procedure between supervisor and undercover agent to ensure good psychological health/stability during and after the period of undercover work.

The psychological services program is basically a psychiatrist who provides counseling, therapy, and refers the agent to a psychiatrist or therapist in the agent's geographic area. The psychiatrist and his wife also do family counseling. This program is voluntary, the individual agent seeks out the service. Though, of course, one's supervisor can recommend that such help should be obtained.

Another program the FBI has is for agents involved in undercover work called "Safeguarding the Psychological Health of Undercover Agents." It consists of a minimum of four interviews between supervisor and undercover agent. The first interview is the "Preliminary Interview for Undercover Assignment," the second (and perhaps additional ones) is "Six Months' Interview for Undercover Project", the third is "Debriefing Interview for Undercover Project", and the fourth is "Follow-up Interview for Undercover Project". This set of interviews recognizes the importance to both the organization and the individual of the agent's psychological health/stability. It is an effort to make the agents more "reliable" in both the short and long term. (Attachment 2 contains copies of the four interview formats.) (Howard Teten of the Institutional Research and Development Unit designed this package.)

This program has been well received in that the agents and FBI management both recognized the need for ensuring reliable agents before, during, and after undercover work. Part of the acceptance is, in fact, related to a recent incident in which an undercover agent was involved in illegal activities unrelated to his undercover assignment.

These are the only formal services/programs provided; though, of course, there are performance appraisals. Yates, however, said that their performance ratings show little or no variance -- 95% receive excellent, 4% receive outstanding, and 1% receive average ratings.

The "reliability" of an agent's behavior is monitored by supervisors. If there is a problem, they generally will take care of it on an informal basis through work assignment to something less sensitive. They will recommend AA, the psychological services program, etc. They also can place the agent on limited duty, take away his/her gun, and/or strongly curtail his/her assignments.

#### ARRO Redesign of the Selection System

The FBI is presently examining ARRO's recommendations and will have a decision in July about what they will implement. Yates is not yet knowledgeable about what ARRO is recommend-

ing, but he did know that they had developed a personality inventory, a numerical ability test, a verbal ability test, a general ability test, a writing (essay) test, a listening test (that involved listening to a tape, remembering the contents, extracting the important information, and writing the information in logical, readable form). There was, according to Yates, a huge battery of tests, so this is undoubtedly only a sample of them.

ARRO also hired DDI to develop a targeted interview for the special agent position. They used, according to Yates, the seven behavioral dimensions he identified in his PAQ job analysis. Apparently, they are weighted as follows:

<u>Weight</u>	<u>Dimension</u>
1.0	Oral Communication
.89	Impact
.89	Motivation/Commitment
.87	Initiative
.84	Work Standards
.65	Independence
.50	Range of Interests

(ARRO also did a job analysis so this seems odd--perhaps ARRO did a task analysis and their dimensions were not behavioral dimensions. In fact, when I went to the DEA bidder's conference, the ARRO job analysis dimensions for FBI special agents were provided and I copied them. Attachment 3 is a list of ARRO's FBI special agent job dimensions.)

#### Other Information

- . There are approximately 8,000 special agents.
- . The hierarchy with regards to special agent Bob Yates is:

Director: Webster  
|  
John Otto  
|  
Jim McKinzie  
|  
Bob Yates

- . New hires in the last six years are:

<u>Year</u>	<u>Number</u>
1983	662
1982	348
1981	183
1980	542
1979	345
1978	666

- . There are 59 field offices. Each one is autonomous. There is a Special Agent in Charge (SAC) at each one.
- . Special Agents are on call 24 hours a day. There is a two-hour rule, which means you check in every two hours so that your whereabouts is always known. Even if you are on vacation driving across country, you must file your itinerary, have a contact (generally the local police department) in each town you intend to spend the night, and check in with them when you arrive.
- . Retirement is mandatory after 20 years or age 55, whichever comes first.
- . Bob Yates was transferred from the field to "training" in 1972 and told to develop a test that would "predict job performance of special agents." Prior to 1972, the FBI used a mental ability test and an interview. According to Yates, the interview was the determiner of who was hired and the test score, which was never revealed, was used as the reason when a person was not hired. The interviews were conducted at the field office by the Special Agent in Charge, and were, according to Yates, completely unstandardized. Yates said there was no consistency to the interviews and that such characteristics as dress and haircut were probably the major knock-out factors. The interview apparently had little to do with what it took to be successful on the job. (The FBI has a lot of confidence in interviewing because that is how they obtain much of their information.) The FBI used to have a spelling test, which, according to Yates, really didn't have much value. They also used to use college grade point

average but, according to Yates, grades are not comparable across schools because different schools have different academic standards and different scales. This, too, was eliminated. There also used to be a height requirement, 5'7", but even Hoover made "all kinds of exceptions to it." Hoover made final selection decisions.

When Yates was given the assignment to develop a new test, he conducted a job analysis using the PAQ. Based on that, he developed an attitude type questionnaire; he said he was trying to relate personality characteristics with job performance. He correlated the test scores with training grades and found it had good concurrent validity, corrected for restriction in range.

- . Probation is one year from time of hire.
- . Training is 16 weeks. There are about 40 per class. They go through training as a class.
- . ARRO completed a major job analysis as a part of the redesign and development of a new selection procedure for special agents. The tests will be implemented in July.

ATTACHMENT 1  
NEW AGENTS PHYSICAL FITNESS TESTS  
AND RATING SCALE FOR MEN AND WOMEN

(12/1/82)

MEN

<u>PULLUPS</u>	
<u>NUMBER COMPLETED</u>	<u>POINTS</u>
0 - 1	0
2 - 3	1
4 - 5	2
6 - 7	3
8 - 9	4
10 - 11	5
12 - 13	6
14 - 15	7
16 - 17	8
18 - 19	9
20 →	10

SITUPS

<u>NUMBER COMPLETED</u>	<u>POINTS</u>
0 - 45	0
46 - 51	1
52 - 57	2
58 - 63	3
64 - 69	4
70 - 75	5
76 - 81	6
82 - 87	7
88 - 93	8
94 - 99	9
100 →	10

PUSHUPS

<u>NUMBER COMPLETED</u>	<u>POINTS</u>
0 - 24	0
25 - 30	1
31 - 35	2
36 - 40	3
41 - 45	4
46 - 50	5
51 - 55	6
56 - 60	7
61 - 65	8
66 - 70	9
71 →	10

WOMEN

<u>MODIFIED PULLUPS</u>	
<u>NUMBER COMPLETED</u>	<u>POINTS</u>
0 - 9	0
10 - 11	1
12 - 13	2
14 - 15	3
16 - 17	4
18 - 19	5
20 - 21	6
22 - 23	7
24 - 25	8
26 - 27	9
28 →	10

SITUPS

<u>NUMBER COMPLETED</u>	<u>POINTS</u>
0 - 45	0
46 - 51	1
52 - 57	2
58 - 63	3
64 - 69	4
70 - 75	5
76 - 81	6
82 - 87	7
88 - 93	8
94 - 99	9
100 →	10

PUSHUPS

<u>NUMBER COMPLETED</u>	<u>POINTS</u>
0 - 13	0
14 - 17	1
18 - 21	2
22 - 25	3
26 - 29	4
30 - 33	5
34 - 37	6
38 - 41	7
42 - 45	8
46 - 49	9
50 →	10

PREVIOUS PAGE  
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SHUTTLE RUN

<u>NUMBER COMPLETED</u>	<u>POINTS</u>
26.3 →	0
25.1 - 26.0	1
24.6 - 25.0	2
23.1 - 24.5	3
23.6 - 24.0	4
23.2 - 23.5	5
22.5 - 23.1	6
22.4 - 22.7	7
22.0 - 22.3	8
21.6 - 21.9	9
21.5 ←	10

TWO-MILE RUN

<u>NUMBER COMPLETED</u>	<u>POINTS</u>
16:31 →	0
15:29 - 16:30	1
15:21 - 16:30	2
14:55 - 15:23	3
14:26 - 14:54	4
13:57 - 14:25	5
13:28 - 13:56	6
12:59 - 13:27	7
12:30 - 12:58	8
12:01 - 12:29	9
12:00 ←	10

SHUTTLE RUN

<u>NUMBER COMPLETED</u>	<u>POINTS</u>
29.1 →	0
28.1 - 29.0	1
27.0 - 28.0	2
27.1 - 27.9	3
26.6 - 27.0	4
26.1 - 26.5	5
25.6 - 26.0	6
25.1 - 25.5	7
24.6 - 25.0	8
24.1 - 24.5	9
24.0 ←	10

TWO-MILE RUN

<u>NUMBER COMPLETED</u>	<u>POINTS</u>
18:46 →	0
17:56 - 18:45	1
17:21 - 17:55	2
17:01 - 17:20	3
16:31 - 17:00	4
15:51 - 16:30	5
15:31 - 15:50	6
15:01 - 15:30	7
14:31 - 15:00	8
13:46 - 14:30	9
13:45 ←	10

By the end of the 12th week, trainees must score an aggregate of 15 points with at least one (1) point in each event.

ATTACHMENT 2  
INTERVIEW FORMATS FOR SAFEGUARDING THE  
PSYCHOLOGICAL HEALTH OF UNDERCOVER AGENTS

PRELIMINARY INTERVIEW FOR  
UNDERCOVER ASSIGNMENT

Project \_\_\_\_\_ Date \_\_\_\_\_  
Applicant \_\_\_\_\_ Office \_\_\_\_\_  
Interviewer \_\_\_\_\_ Office \_\_\_\_\_

A. Prior Experience

1. Has the applicant worked undercover before (Bureau or otherwise)? \_\_\_\_\_
  - a. If yes, where was the last project? \_\_\_\_\_
  - b. What kind of a project? \_\_\_\_\_
  - c. How long was the applicant undercover? \_\_\_\_\_
  - d. How long ago did the project end? \_\_\_\_\_
  - e. What were the results of the project? \_\_\_\_\_
  - f. Who was his/her supervisor, coordinator, and contact Agent on the last project? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

b. Current Project

1. Ask the applicant to give you his/her understanding of the proposed project.
2. Ask the applicant to describe the exact nature and responsibility of the role for which he/she is being considered.
3. Why does he/she wish to be considered for this particular role?
4. How long would applicant be willing to remain in this particular role?
5. Ask the applicant if he/she really feels this project is of sufficient importance to justify the amount of time and money necessary to make it work.
6. Ask the applicant to describe how he/she would justify this project to a critical public.

PREVIOUS PAGE  
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C. Family Circumstances

1. Is the applicant married? If so how long? \_\_\_\_\_
2. Has applicant ever been divorced or separated, or have these actions ever been considered? \_\_\_\_\_ Are they presently under consideration? \_\_\_\_\_
3. Who would care for the spouse/home/apartment/animals/financial affairs, etc., while the applicant is on the assignment?
4. How would the applicant feel about having an Agent periodically contact his spouse/family/children while he/she is on assignment to determine their well-being?
5. Is the spouse employed? \_\_\_\_\_  
If yes, what is the occupation?
6. Is there anyone in the family in poor health, or does anyone have a chronic health problem?
7. Does the applicant have family/relatives/friends in or near the area of the project?

D. Personal

1. Does the applicant have any type of outside commitments at this time or in the foreseeable future?
2. If the applicant has previously worked undercover, ask him/her to describe the most difficult personal problems and/or adjustments they had to deal with while working undercover and when they returned to regular duties?



AD-A166 251

BEHAVIORAL RELIABILITY A REVIEW OF ACADEMIC LITERATURE  
AND ORGANIZATIONAL.. (U) PERSONNEL DECISIONS RESEARCH  
INST MINNEAPOLIS MN B N BARGE ET AL. 31 DEC 84 96

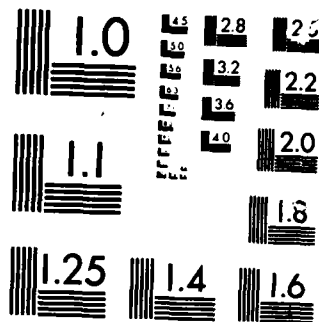
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UNCLASSIFIED

DNA-TR-85-21 DNA001-83-C-0050

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NL:



MICROCOPY RESOLUTION TEST CHART

3. Has the applicant been ill recently? If so, what was the problem? \_\_\_\_\_

Has the applicant experienced:

<input type="checkbox"/> Frequent Headaches	<input type="checkbox"/> Frequent Indigestion
<input type="checkbox"/> Frequent Constipation	<input type="checkbox"/> Frequent Diarrhea
<input type="checkbox"/> Colitis	<input type="checkbox"/> Diabetes
<input type="checkbox"/> Arthritis	<input type="checkbox"/> Insomnia
<input type="checkbox"/> Ulcers	<input type="checkbox"/> Asthma
<input type="checkbox"/> Allergies	<input type="checkbox"/> Other (Specify: _____)

4. Is the applicant taking any type of medication? If so, what?

Prescription \_\_\_\_\_

Over the Counter \_\_\_\_\_

For what purpose? \_\_\_\_\_

Is applicant taking:

<input type="checkbox"/> Muscle Relaxants	<input type="checkbox"/> Tranquilizers
<input type="checkbox"/> Antacids	<input type="checkbox"/> Antihistamines
<input type="checkbox"/> Diet Pills	<input type="checkbox"/> Sleeping Pills
<input type="checkbox"/> Antibiotics	<input type="checkbox"/> Other (Specify: _____)

5. Has applicant recently experienced any:

☐ Inability to enjoy life or work?

☐ Need to get away from the office or family for a while?

☐ General "blahs" or depression?

☐ Need to reexamine his/her goals and values?

☐ Increased irritability when dealing with others?

☐ Feelings of rejection, or bitterness as a result of case assignments and/or general treatment by supervisor?

6 MONTH INTERVIEW FOR  
UNDERCOVER PROJECT

(Interview Number \_\_\_\_\_)

Project \_\_\_\_\_ Date \_\_\_\_\_

Undercover Agent \_\_\_\_\_ Office \_\_\_\_\_

Interviewer \_\_\_\_\_ Office \_\_\_\_\_

Interview

1. Ask, in general terms, how the undercover Agent (UCA) is getting along; if there is adequate communication with the office and supervisor; if the equipment is sufficient; if the meetings with the contact Agent have been productive and helpful, etc.
2. Ask the UCA to describe the project, its current objectives and any progress that has been made.
3. Determine if he/she has been having any aches and pains, or other physical problems of any kind.
4. Ask the UCA what personal adjustments and changes have been most difficult.
5. How is the UCA spending his/her time when not engaged in the assigned undercover role?
6. Ask if there are any problems such as family illnesses, home maintenance, lack of clothing, unpaid bills, etc., which have surfaced recently and need to be handled.
7. Ask the UCA if he/she feels safe.
8. Ask the UCA if there have been any disagreements about the project or the UCA's role in the project.
9. Can the UCA name any individuals who should be developed as possible informants?

10. Determine what the UCA's feelings are about the target or target group now that he/she has had a chance to evaluate them more carefully.
11. Is the UCA aware of any changes of attitude toward him/her by the Agents in the office? If so, how is the UCA dealing with this problem?
12. Can the UCA foresee the manner in which the project will be concluded?
13. Determine if the UCA is prepared for the end of the project.
14. Has the UCA considered what he/she will do after the project is over?
15. Point out any changes or increased tendencies mentioned by the contact Agent and discuss their implications.
16. Has the UCA been ill recently? If so, what was the problem? \_\_\_\_\_

Has UCA experienced:

- |  |   |
|--|---|
| <input type="checkbox"/> Frequent Headaches    | <input type="checkbox"/> Frequent Indigestion   |
| <input type="checkbox"/> Frequent Constipation | <input type="checkbox"/> Frequent Diarrhea      |
| <input type="checkbox"/> Colitis               | <input type="checkbox"/> Diabetes               |
| <input type="checkbox"/> Arthritis             | <input type="checkbox"/> Insomnia               |
| <input type="checkbox"/> Ulcers                | <input type="checkbox"/> Asthma                 |
| <input type="checkbox"/> Allergies             | <input type="checkbox"/> Other (Specify: _____) |

17. Is the UCA taking any type of medication? If so, what?

Prescription \_\_\_\_\_

Over the Counter \_\_\_\_\_

For what purpose? \_\_\_\_\_

Is UCA taking:

- |   |   |
|---|---|
| <input type="checkbox"/> Muscle Relaxants | <input type="checkbox"/> Tranquilizers          |
| <input type="checkbox"/> Antacids         | <input type="checkbox"/> Antihistamines         |
| <input type="checkbox"/> Diet Pills       | <input type="checkbox"/> Sleeping Pills         |
| <input type="checkbox"/> Antibiotics      | <input type="checkbox"/> Other (Specify: _____) |

18. Has the UCA recently experienced any:

\_\_\_ Inability to enjoy life or work?

\_\_\_ Need to get away from the office or family for a while?

\_\_\_ General "blahs" or depression?

\_\_\_ Need to reexamine his/her goals and values?

\_\_\_ Increased irritability when dealing with others?

\_\_\_ Feelings of rejection, or bitterness as a result of case assignments and/or general treatment by supervisor?

DEBRIEFING INTERVIEW FOR UNDERCOVER PROJECT

Project \_\_\_\_\_

Date \_\_\_\_\_

Undercover Agent \_\_\_\_\_

Office \_\_\_\_\_

Interviewer \_\_\_\_\_

Office \_\_\_\_\_

Interview

1. Have the Undercover Agent (UCA) describe the project and his/her personal successes and failures.
2. Ask if the UCA accomplished what he/she set out to do.
3. Did the supervisor/case Agent, etc., work closely with the UCA in the final stages of the project?
4. Was the decision to close down the project made with the full knowledge and agreement of the UCA?
5. Was the assignment flexible enough to permit his/her handling of any personal emergencies and/or problems?
6. Does the UCA feel angry, cheated or bitter about his/her treatment while working undercover?
7. Determine the most difficult personal problems encountered by the UCA during the assignment.
8. Have these problems been completely resolved?
9. How were the problems handled?
10. Ask the UCA if he/she was really the right person for this assignment.
11. Ask what advice, warnings and/or direction should be given to the next UCA applying for assignment to this type of project.

12. What are his/her greatest concerns now that the operation is over?
13. What kind of an assignment would now be most beneficial to both the UCA and the Bureau?
14. Does the UCA feel he/she will need some assistance or time off before returning to regular duties?
15. Has the undercover experience altered his/her perception of the FBI? In what way?
16. Ask the UCA if he/she feels safe.
17. Has the UCA been ill recently? If so, what was the problem?
- \_\_\_\_\_
- \_\_\_\_\_

Has UCA experienced:

- |  |   |
|--|---|
| <input type="checkbox"/> Frequent Headaches    | <input type="checkbox"/> Frequent Indigestion   |
| <input type="checkbox"/> Frequent Constipation | <input type="checkbox"/> Frequent Diarrhea      |
| <input type="checkbox"/> Colitis               | <input type="checkbox"/> Diabetes               |
| <input type="checkbox"/> Arthritis             | <input type="checkbox"/> Insomnia               |
| <input type="checkbox"/> Ulcers                | <input type="checkbox"/> Asthma                 |
| <input type="checkbox"/> Allergies             | <input type="checkbox"/> Other (Specify: _____) |

18. Is the UCA taking any type of medication? If so, what?

Prescription \_\_\_\_\_

Over the Counter \_\_\_\_\_

For what purpose? \_\_\_\_\_

Is UCA taking:

- |   |   |
|---|---|
| <input type="checkbox"/> Muscle Relaxants | <input type="checkbox"/> Tranquilizers          |
| <input type="checkbox"/> Antacids         | <input type="checkbox"/> Antihistamines         |
| <input type="checkbox"/> Diet Pills       | <input type="checkbox"/> Sleeping Pills         |
| <input type="checkbox"/> Antibiotics      | <input type="checkbox"/> Other (Specify: _____) |



19. Has the UCA recently experienced any:

- ☐ Inability to enjoy life or work?
- ☐ Need to get away from the office or family for a while?
- ☐ General "blahs" or depression?
- ☐ Need to reexamine his/her goals and values?
- ☐ Increased irritability when dealing with others?

SAFEGUARDING THE PSYCHOLOGICAL HEALTH  
OF UNDERCOVER AGENTS

Undercover Coordinator's Checklist

Follow-Up Interview for Undercover Project

Interview

1. Does the undercover Agent (UCA) feel angry, cheated or bitter about his/her treatment since the end of the program?
2. Does the UCA feel the project was sufficiently important to warrant the time and sacrifices involved?
3. Ask the UCA if he/she feels differently about the FBI as a result of this experience.
4. What actions could have been taken to further assist the UCA in his/her return to regular duties?
5. Ask the UCA if his/her part in the project was successful.
6. What are the most difficult personal problems that have had to be dealt with since the conclusion of the project.
7. Have these problems been resolved?
8. Ask the UCA what advise he would give another UCA considering a similar assignment in terms of:
  1. preparation for the assignment
  2. how it will be supervised
  3. selection of contact Agent(s)
  4. providing for family
  5. handling the stress
  6. setting time limits
  7. the importance of the project
  8. preparation for the return to regular duties

Attachment 3

ARRO's FBI Special Agent  
Job Dimensions

## FBI JOB DIMENSIONS

Administrative Actions

Affirmative Action

Recruitment

Selection/Assesment

Training/Coaching

Budget Management

Career Management

Case Development

Cooperation/Coordination  
with other Federal Agencies

Disciplinary Action,  
Integrity of Investigation

Enforcement Evaluation/Oversight

FOI(Freedom of Information)  
Interpretation/Determination

Intelligence

Organizational Staffing-  
Positive Development

Performance Evaluation

Policy Procedures

Public Relations/Promotions/  
Advocacy

Response to FOI  
(Freedom of Information Act)

State, Local, other governmental  
cooperation

Support/Cooperation assistance  
to DEA offices

Work Planning/Monitoring/  
Controlling Staff Activities

Relations with International Organization

Enforcement Information-including  
statistical Security

Time and Attendance

Procurement

Assets Seizure

Suspect Arrest

Evidence

Case Initiation

Case Development

Informant Development/Supervision

Intelligence

Internal Security

State, Local Enforcement  
Agency Cooperation

Intelligence Assistance  
to FPIC members

ANNEX 2

LOS ANGELES POLICE DEPARTMENT

- Interviewees:
1. Captain William Davis  
Personnel Division
  2. Commander Glenn Levant  
Office of Operations
  3. Captain Thomas G. Hays  
Training Division
  4. Marsha Noble  
Senior Personnel Analyst  
Police Officer Selection Unit

Interviewer: Leaetta Hough

Dates: 17-18 July 1984

SELECTION OF LAPD POLICE OFFICERS

The minimum entrance requirements are as follows:

1. age - 21 years
2. education - high school diploma or GED equivalent
3. citizenship - U.S.A. citizenship as soon as possible; must submit proof of U.S.A. citizenship application.
4. vision - uncorrected at least 20/40 using both eyes, with at least 20/70 in the poorer eye and at least 20/40 in the better eye; correctable to 20/30; normal depth perception and satisfactory color vision required
5. height/weight - at least 5' 0", not more than 6' 8"; weight appropriate for height and build
6. health - excellent with no conditions which would restrict ability to safely do police work
7. background - no felony convictions

The selection process is as follows:

1. Qualifying written test - The qualifying written test measures reading comprehension, English usage (including spelling and vocabulary), reasoning, and ability to make common sense judgments on practical problems. This

requirement can be waived if the person has: a) completed, with a "C" average or better, 60 college semester units or 90 college quarter units; b) been employed by LA for three or more months; or c) been full-time in law enforcement for the past year and has a California Peace Officer Standards and Training Certificate.

The test is used only as a disqualifier. If a person passes, his or her score on this test has no impact on the ranking of candidates. This is very interesting because apparently the research that has been done at the LAPD indicates I.Q. and academic performance are the best and only empirically valid performance of job performance.

Apparently very few people are disqualified by the written exam, and the test may be taken once every three months. According to Ms. Noble 80% pass. Those who pass are scheduled for an interview. Ms. Noble said that there is quite a bit of self-selecting out; many people who pass one phase do not show up for the next one.

2. Interview The interview, which can be taken once every three months, evaluates employment history and education, ability to relate to others, reasoning and problem-solving ability in answering situation questions, and communication skills. Passing is obtaining a score of 70 or higher (out of 100). This score determines the candidate's rank.

The interview panel consists of about three people: a police sergeant or detective, a person from the personnel department (city), and a person from the community. It is about a 20-30 minute interview. It is a highly structured interview. Two of the questions consist of police situational judgment items. The interviewers independently rate the applicant on four dimensions: 1) employment and education history, 2) interpersonal skills, 3) reasoning and problem solving, and 4) oral communication skills.

3. Physical Abilities Test This is only used to disqualify candidates. It is designed to measure physical endurance, strength and agility. This part of the selection process can be taken as often as desired.
4. Medical Exam This also is only a disqualifier. The candidate must be in excellent health with no conditions that would restrict one's ability to do police work safely. There must be a minimum amount of body fat. A cardiac stress test on a treadmill is sometimes required.
5. Psychological Evaluation This is done by a city-employed psychologist. The MMPI is administered. According to Captain Davis, the rate of disqualifications is based on who the psychologist is. One disqualified 70% of those he saw; the current fellow disqualifies about 17%.
6. Background Investigation This is also used only to disqualify candidates. The background investigation includes an interview and a thorough check of police records; personal, military, and employment, histories; and inquiry of persons who know the applicant to evaluate whether the applicant: 1) respects the law; 2) is honest; 3) has mature judgment; 4) respects the rights of others; 5) has a good employment record; 6) has a good military record; 7) has a responsible financial

record; and 8) has a good driving record. There are "conduct guidelines" which the background investigators use in evaluating candidates on these dimensions. It contains specific examples of what the background investigator should look for and is therefore included verbatim below.

## B. CONDUCT GUIDELINES

Police Officer applicants will be considered for employment only when there is sufficient evidence to indicate that an applicant's personal conduct meets the above high background standards. Each of the background standards and related adverse conduct is considered separately, taking into consideration the nature and seriousness of the conduct, the circumstances surrounding the conduct, the recency of the conduct, the age of the candidate at the time and the presence or absence of rehabilitative efforts. The following guidelines are not all-inclusive but are among the principal factors to be considered by the Personnel Department in evaluating an applicant's candidacy; candidates may be considered for disqualification for conduct which is not specifically mentioned in the Conduct Guidelines:

### Standard

#### 1. Respect for the law

### Conduct to be Considered

- a. See Personnel Department Policy 1.3, "Employment of Persons with Criminal Records."
- b. Substantiated, active, continuing association with a person or persons who repeatedly commit serious violations of local, state or federal laws where the candidate has knowledge of such activities.
- c. Substantiated association with, or membership in, any group or organization having a demonstrable record of criminal activities or as one of its purposes the overthrow of the Government by illegal means, the candidate having knowledge of such illegal purposes and the intent to support those purposes.



2. Honesty

Substantiated theft or pattern of thefts from employer or others; deceitful acts such as claiming disability when not disabled, whether for personal gain or not; or falsifying or misrepresenting facts in the selection process. Also: see CSC Rule 3.5e, and Personnel Department Policy 1.10.

3. Mature Judgment

a. Any substantiated pattern of habitual use of intoxicating beverages which has resulted in irresponsible behavior including but not limited to illegal conduct, a poor work record, or financial problems.

b. Any substantiated illegal act involving narcotics or dangerous drugs as defined by state or federal law.

(Illegal use of hard narcotics or hallucinogenic drugs having flashback potential, or injecting of any drugs into the body illegally, shall, in itself, be evidence of conduct not meeting the standard.)

c. Any substantiated illegal or notorious sexual conduct such as acts occurring in a public or semi-public atmosphere. (Sexual conduct in private between consenting adults shall not, in and of itself, be disqualifying. Sexual behavior which may be indicative of a personality disorder, discovered during the background investigation, shall be referred to medical or psychological personnel for evaluation in accordance with the Medical Standards for Police and Fire Service.)

4. Respect for Others      Substantiated record of significant discourteous, abusive or violent treatment of others which demonstrates a candidate's lack of self-discipline, an unwillingness to work with others in a team effort, or a disregard for the rights of others.
5. Good Employment Record      See CSC Rule 3.5d, Personnel Department Policy 1.6.
6. Honorable Military Records      Substantiated inability to adjust to military training or discipline. Military convictions or the commission of illegal acts while in the military service will be considered the same as convictions or the commission of illegal acts as a civilian.
7. Responsible Financial Record      Evidence of poor financial management characterized by irresponsible purchases or a disregard for payment obligations, or legal gambling which has resulted in substantial financial problems. Bankruptcy, in and of itself, is not a basis for disqualification.
8. Proficient Driving Record      a. Police Officer: See Personnel Department Policies 1.3d and 1.5.
- b. Firefighter: "Applicants must have a responsible driving record, free of convictions for serious offenses (i.e., drunk driving, reckless driving, etc.) and also free of serious chargeable accidents (i.e., manslaughter, etc.) for at least one year.

In interpreting this policy further investigation of candidates with more than four violations or accidents in the last two years would be made. In addition to checking the recency and seriousness of the violations, other aspects of the applicant's background will be considered in determining if other patterns of irresponsibility exist.

The background investigators also evaluate the candidates on: 1) logical reasoning; 2) decisiveness; 3) organizational compatibility; 4) self-confidence; 5) sensitivity; 6) stress tolerance; 7) impact; 8) positive motivation; and 9) behavioral flexibility. The LAPD also has defined these dimensions and included descriptions for each dimension to aid the investigators. These dimensions, definitions, and descriptions appear verbatim below:

PSYCHOLOGICAL DATA SHEET FOR BACKGROUND INVESTIGATORS

Stuart M. Shaffer, Ph.D.  
Clinical Psychologist

January 5, 1979

DIMENSION

- A. Logical Reasoning: choosing and acting on an appropriate course of action from a number of alternatives, frequently under severe time limitation. No psychological aberrant behavior which could cloud decision making.

DESCRIPTORS

Positive:

Clear-thinking  
Has common sense  
Knows what's happening  
Logical  
Rational  
Reasonable  
Sound Judgment  
Thinks clearly  
Thinks logically

Negative:

Absent-minded  
Cloudy thinking  
Confused  
Does stupid things  
Foolish  
Forgetful  
Hard to follow  
In a fog  
Makes dumb decisions  
Slow  
Unstable

DIMENSION

- B. Decisiveness: Readiness to make decisions or render judgment given the best information available. The individual must also have the ability to recognize when sufficient information is not available.

DESCRIPTORS

Positive:

Accepts responsibility  
Appropriately cautious  
Assertive  
Efficient  
Fair-minded  
Independent  
Quick

Negative:

Bossy  
Disorganized  
Evasive  
Impatient  
Impulsive  
Needs constant direction  
Reckless  
Suggestible

#### DIMENSION

- C. Organizational Compatibility: Must be able to function independently with limited supervision and also as a member of a team.

#### DESCRIPTORS

##### Positive:

Approachable  
Cheerful  
Cooperative  
Dependable  
Does what he's told  
Likeable  
Loyal  
Reliable  
Takes orders

##### Negative:

Arrogant  
Argumentative  
Can't take criticism  
Careless  
Cold  
Inconsiderate  
Individualistic  
Uncomfortably  
unpredictable  
Unreliable

#### DIMENSION

- D. Self-Confidence: Can function in a situation where there is the potential for scorn or ridicule, without acting threatened or challenged.

#### DESCRIPTORS

##### Positive:

Confident  
Courageous  
Mature  
Self-assured  
Self-confident  
Unafraid  
Works well without  
supervision

##### Negative:

Afraid to try new  
things  
Can't handle  
responsibility  
Constantly needs  
encouragement  
Defensive  
Fearful  
Submissive  
Touchy  
Weak  
Wishy Washy

DIMENSION

- E. Sensitivity: Skill in perceiving and reacting to the needs of others. Objectivity in perceiving impact of self on others.

DESCRIPTORS

Positive:

Concerned about others  
Considerate  
Forgiving  
Friendly  
Gentle  
Good-natured  
Good manners  
Sensitive  
Understanding  
Warm

Negative:

Abusive to others  
Aggressive  
Boastful  
Cruel  
Fault finding  
Hostile  
Immature  
Indifferent  
Moody  
Prejudiced  
Pushy  
Quarrelsome  
Sarcastic  
Tactless

DIMENSION

- F. Stress Tolerance: Ability to function in an effective manner under pressure and opposition without overt negative behavioral manifestations; under these conditions, emotionalism must not cloud objectivity.

DESCRIPTORS

Positive:

Calm  
Capable  
Cool under pressure  
Performs well under pressure  
Relaxed  
Unexcitable

Negative:

Anxious  
Appears tense  
Breaks down if pushed  
Emotional  
Excitable  
High strung  
Hurried  
Nervous  
Restless  
Tense  
Tries to get out of tension producing situations

DIMENSION

G. Impact: Ability to command attention and respect, show an air of confidence.

DESCRIPTORS

Positive:

Dignified  
Dominant  
Formal  
Ideas on target  
Is a leader  
Outgoing  
Strong

Negative:

Apathetic  
Awkward  
Cocky  
Dependent  
Fearful  
Infantile  
Meek  
Overly demanding  
Shallow  
Shy  
Shies away from  
social contact  
Sloppy  
Temperamental  
Timid  
Withdrawn



DIMENSION

- H. Positive Motivation: An interest in service to the community, individuals, and self. Sets high standards for self.

DESCRIPTORS

Positive:

Active  
Conscientious  
Contented  
Determined  
Energetic  
Enthusiastic  
Finishes what he/she starts  
Honest  
Industrious  
Organized  
Persevering  
Persistent  
Responsible  
Serious

Negative:

Bitter  
Can't get his act together  
Complaining  
Dissatisfied  
Doesn't finish what he/she starts  
Gloomy  
Greedy  
Irresponsible  
Lazy  
Loser  
Quitting  
Unambitious  
Unrealistic

DIMENSION

- I. Behavioral Flexibility: Managing to function under conditions where one must attend to several abstract and concrete variables simultaneously through time; remaining task oriented under conditions of high or low work activity and coping with distractions.

DESCRIPTORS

Positive:

Adaptable  
Easy going  
Enterprising  
Foresighted  
Insightful  
Practical  
Progressive  
Realistic  
Resourceful  
Willing to try new ways

Negative:

Frivolous  
Hardheaded  
Headstrong  
Intolerant  
Not flexible  
Opinionated  
Rigid  
Stubborn

During the interview with Captain Davis, he said that any single use of hard narcotics is disqualifying. If a candidate has smoked marijuana more than 100 times, he or she is disqualified.

They perform lie detector tests if there is evidence that the person is not telling the truth.

Attachment contains several forms that are used during the selection process.

The LAPD selection process currently operates under a consent decree. They have to hire more women until the department is 25% female. For blacks and Hispanics, they have goals rather than a mandated percent.

The research that has been done at the LAPD has shown that the success rate on the street is the same for men and women and for all combinations of partners: female/female, male/female, and male/male. They have also found that there is no correlation between shooting scores at the Academy and success on the street, nor is there a relationship between physical prowess and success on the street. There is a correlation between academic achievement or mental ability and success on the street. Captain Davis feels that personality is also an important determinant of success on the street. I'm uncertain whether their research included any personality measures.

#### Monitoring

The Academy training will be considered a part of monitoring. The Academy is very military, very regimented. It is like boot camp. Approximately 400-500 recruits go through the Academy each year.

Part of the consent decree agreement included having similar attrition rates for men and women from the Academy. Previously, the attrition rate from the Academy for women was 62%, for men 18%. The problem for women was upper body strength and command presence. They now have a program called "Crime Prevention Assistance" whereby women are allowed to be employed by the city for 4-5 months. For 6 of 8 hours each day the woman performs services for the department, the other two hours of the day she works out with the training staff, doing primarily weight lifting exercises. LAPD also developed a program called "POWR" or "Positive Orientation for Winning Response." This is a one-hour class and is designed to prepare women for street work. It focuses on how to control oneself in a competitive, electrifying situation, to not break down and cry in such a situation. It teaches "command presence." According to Captain Hays, these two programs have brought the Academy attrition rate for women down to approximately that of men.

The regular training at the Academy is divided into four sections: 1) instructional technology section; 2) recruit training section, 3) specialized training section; and 4) organizational development section (advanced training of management techniques for sergeants, detectives, lieutenants, and higher). They use classroom training, audio and video tapes, books, simulation, and role-playing techniques.

The training includes physical conditioning, self-defense, first aid, cardio-pulmonary resuscitation, and ordnance training. There is also a simulator which is designed to teach decision-making under stress in potential field shooting situations. It's called DEFT, "Development and Evaluation of Firearms Training"

and permits an officer to view true-to-life filmed enactments of various situations and react to them in a non-life-threatening setting, actually firing at targets on the special, curved screen which registers a score. The officer's performance is videotaped and then critiqued both by a live instructor and a computer which reports the trainee's accuracy and compliance with LAPD shooting policy. Captain Hays thinks the DEFT is the best part of the Academy.

When asked what they could be doing better, Captain Hays said he thought they should teach some social graces, such as how to enter a room, how to be professional, how to be polite, etc. He also said he didn't think they should be spending time to teach Spanish to all the recruits.

When the Academy training is almost complete, the spouses are invited to the Academy for a one day program. This day is devoted to showing the spouses what the officers will experience.

Once training is complete, the new officer is with a training officer for one year. (Probation lasts 1½ years, the first six months are the Academy). The training officer rates the new candidate every two weeks the first three months, then every month. The LAPD loses about 12 people for inability to perform to standards during this one year period.

The LAPD distinguishes between performance deficiencies and misconduct. During probation, an officer is terminated immediately for misconduct.

The LAPD has an "Early Prevention of Emotional Problems" program. Part of this program consists of presentations and education about stress management. It also includes teaching supervisors how to detect behavioral changes in subordinates that indicate the need for psychological services. An officer can voluntarily use the services of the psychologists. If the officer does voluntarily seek help, management never knows about it. A supervisor can not order an officer to seek counseling; however, the supervisor can order a "fitness report" on the officer. In such a situation, the psychologist prepares a fitness report for management. Part of this fitness report includes whether or not the officer is sufficiently reliable to carry a gun. About 80% come in on a confidential basis, the other 20% are ordered in. A fitness report is mandatory if the officer is involved in a shooting.

Another program that the LAPD has is called the "PEER Counseling" program. It consists of volunteers who have experienced problems who talk with, counsel, and are supportive of an officer who has a similar problem. Examples of experiences or problems that these volunteers have had are open heart surgery, sexual abuse, and terminal cancer. Captain Levant thinks this is one of the best programs the LAPD has.

Another support program they have is called the Chaplin group. This is presumably for those people who want to deal with someone who has had religious training and has a religious orientation.

If a police officer smokes marijuana as a police officer, the person is terminated. (They can have smoked marijuana fewer than 100 times prior to their becoming a police officer).

LAPD does perform urine analyses but this can only be done for lieutenants and

below if there is probable cause. Captain Davis said they can't go on a witch hunt.

#### Motivation

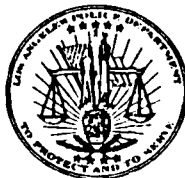
During the interviews, some people suggested ways to increase the attention level or motivation of guards who have uneventful days. These suggestions are: 1) training interventions, 2) simulations, 3) inspections every day at random times, 4) contact the person at least once every hour, 5) "peer" support programs, and 6) official recognition such as officer of the month.

ATTACHMENT

Application Forms

# LOS ANGELES POLICE DEPARTMENT

**DARYL F. GATES**  
Chief of Police



**TOM BRADLEY**  
Mayor

Mailing Address: Box 30158  
Los Angeles, CA 90030

Ref. No.

## CONFIDENTIAL PERSONAL INQUIRY

\_\_\_\_\_ is an applicant  
for the position of \_\_\_\_\_.  
We have been informed that you have knowledge of the applicant's character,  
qualifications, and general fitness.

In our constant effort to select personnel who will maintain the high standards of  
performance which this Department requires, we rely primarily on information  
furnished by reliable individuals. We therefore earnestly request that you fill in  
the attached form and return it as soon as possible. A pre-addressed envelope,  
requiring no postage, is enclosed for your convenience.

Your reply will be **STRICTLY CONFIDENTIAL** in accordance with Section 1040  
(B) of the California Evidence Code: "A public entity has a privilege to refuse  
to disclose official information, and to prevent another from disclosing such  
information,..."

Thank-you for your cooperation and for your prompt reply to this request.

LOS ANGELES POLICE DEPARTMENT

01.12.0 (9/80)

TEMP. # 93 (8.77)

PERSON INTERVIEWED		POSITION	
PERSON INTERVIEWED		POSITION	
PERSON INTERVIEWED		POSITION	
DATES OF EMPLOYMENT:		POSITION AND DUTIES	
FROM	TO	AGE	
WOULD YOU RE-EMPLOY? YES <input type="checkbox"/> NO <input type="checkbox"/> CONDITIONAL <input type="checkbox"/> IF NO OR CONDITIONAL, PLEASE EXPLAIN:			
OVERALL RATING:			
ADVERSE TRAITS:			
WHY DID CANDIDATE LEAVE THIS POSITION?			
REASONS GIVEN BY CANDIDATE ON PHF:			
HAS CANDIDATE BEEN DISCHARGED FROM ANY OTHER JOB? YES <input type="checkbox"/> NO <input type="checkbox"/> IF YES, PLEASE EXPLAIN:			
RESIDENCE ADDRESS GIVEN:			
FORMER EMPLOYERS:		NAME	
ADDRESS (STREET & NUMBER)		CITY STATE	
PUNCTUALITY AND ATTENDANCE RECORD:			
HEALTH AND ACCIDENT RECORD:			
ON THE BASIS OF THE ABOVE AND OTHER KNOWLEDGE OF THE CANDIDATE, YES <input type="checkbox"/> NO <input type="checkbox"/> UNDECIDED <input type="checkbox"/>			
WOULD YOU RECOMMEND HIM/HER FOR THE POSITION OF _____ IF NO OR UNDECIDED, PLEASE EXPLAIN:			
EMPLOYED BY:		ADDRESS	
CANDIDATE'S NAME (LAST, FIRST, MIDDLE)		DATE OF INVESTIGATION	
CLASS DATE		INVESTIGATOR'S NAME AND SERIAL NUMBER	
SATISFACTORY <input type="checkbox"/>		ADVERSE <input type="checkbox"/>	

(USE REVERSE SIDE FOR ADDITIONAL INFORMATION)

LOS ANGELES POLICE DEPARTMENT APPLICANT EMPLOYMENT RECORD

[illegible]



**PERSONAL INQUIRY QUESTIONNAIRE**  
**CONFIDENTIAL**

Name of Applicant \_\_\_\_\_

Position applied for \_\_\_\_\_

TO \_\_\_\_\_

Please answer these questions as completely as possible. Your comments are of the utmost importance in the selection of well qualified personnel.

1. What type of association have you had with the applicant? ☐ Close friend ☐ Neighbor ☐ Casual acquaintance  
☐ Employment ☐ Other \_\_\_\_\_

2. How long have you known the applicant? \_\_\_\_\_

3. How long since you last had contact with the applicant? \_\_\_\_\_

4. How does the applicant get along with friends, neighbors, fellow workers? \_\_\_\_\_

5. How would you describe the applicant's friends and associates? ☐ Law abiding ☐ Questionable ☐ Unknown

COMMENTS \_\_\_\_\_

6. Are you convinced that applicant is honest? ☐ Yes ☐ No ☐ Unable to form opinion

EXPLAIN \_\_\_\_\_

7. Is applicant reliable? ☐ Yes ☐ No ☐ Unknown

COMMENTS \_\_\_\_\_

8. Would you trust applicant with confidential matters? ☐ Yes ☐ No ☐ Unable to form opinion

COMMENTS \_\_\_\_\_

9. To your knowledge, has applicant been involved in any illegal or notorious sexual conduct? ☐ Yes ☐ No

EXPLAIN \_\_\_\_\_

10. Have you observed applicant display racial prejudice? ☐ Yes ☐ No

EXPLAIN (Be specific) \_\_\_\_\_

11. Do you know or suspect that applicant belongs to any subversive or illegal organization? ☐ Yes ☐ No

EXPLAIN \_\_\_\_\_

12. To what extent does applicant drink intoxicating beverages? ☐ Never ☐ Occasionally ☐ Socially ☐ Excessively ☐ Unknown

EXPLAIN \_\_\_\_\_

13. Have you observed or do you have knowledge of the applicant's use of drugs or narcotics? ☐ Yes ☐ No ☐ Unknown

Explain extent of usage \_\_\_\_\_

14. How would you describe the applicant's financial reliability? ☐ Lives within means ☐ lives beyond means ☐ Repossessions

☐ Bankruptcy ☐ Unknown COMMENTS \_\_\_\_\_

15. Does applicant lose his/her temper easily? ☐ Yes ☐ No ☐ Unknown

16. Is applicant able to make decisions under stress? ☐ Yes ☐ No ☐ Unknown

COMMENTS \_\_\_\_\_

17. In your opinion, is applicant emotionally stable? ☐ Yes ☐ No ☐ Questionable

COMMENTS \_\_\_\_\_

18. To your knowledge, does applicant have any physical problems that would interfere with his/her job performance? ☐ Yes ☐ No

COMMENTS: \_\_\_\_\_

19. Do you know anything else about the applicant which should be investigated before appointment to this position? (Consider such things as maturity, loyalty, common sense, judgment, tolerance, ability to recognize own limitations, etc.). \_\_\_\_\_

20. Do you have any other comments? \_\_\_\_\_

21. Please give the names and addresses of other persons who may be able to furnish information regarding this applicant.

Name \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

City \_\_\_\_\_

Phone \_\_\_\_\_

Phone \_\_\_\_\_

IF APPLICANT IS APPLYING FOR THE POSITION OF POLICE OFFICER OR POLICE RESERVE OFFICER, please answer the following question:

22. Would you want the applicant to be a Police Officer (or Police Reserve Officer) for the city in which you live and to be responsible for the safety of you and your family? ☐ Yes ☐ No IF NO, Why? \_\_\_\_\_

ANSWER QUESTIONS 23-31 ONLY IF YOU HAVE EMPLOYED OR WORKED WITH THE APPLICANT.

23. Between what dates did applicant work for or with you? From \_\_\_\_\_ To \_\_\_\_\_

24. Name of Company \_\_\_\_\_

Address \_\_\_\_\_

25. Describe applicant's position and duties: \_\_\_\_\_

26. How did applicant react to company policy, rules, and procedures? ☐ Disobeyed ☐ Resisted ☐ Usually cooperated ☐ Complied fully

COMMENTS: \_\_\_\_\_

27. Please check any problems affecting applicant's work: ☐ Domestic troubles; ☐ Absence or tardiness; ☐ Poor Health; ☐ Disloyalty; ☐ Inability to get along; ☐ Disciplinary problems; ☐ Unable to follow instructions; ☐ Financial problems; ☐ Drinking; ☐ Other \_\_\_\_\_

COMMENTS: \_\_\_\_\_

28. How would you rate applicant's job performance? ☐ Outstanding ☐ Excellent ☐ Satisfactory ☐ Improvement needed ☐ Unsatisfactory

29. Why did applicant leave this job? \_\_\_\_\_

30. Would you rehire applicant? ☐ Yes ☐ No If not, why? \_\_\_\_\_

31. Applicant's former employers (if known)

Name

Address

City/State

1.

2.

3.

Signature

Date

Thank you for your time and cooperation in completing this inquiry. Your answers will be held in strict confidence.

# LOS ANGELES POLICE DEPARTMENT

DARYL F. GATES  
Chief of Police



TOM BRADLEY  
Mayor

Mailing Address: Box 30158  
Los Angeles, Calif. 90030

IN REPLY REFER TO:  
REF. NO.

## CONFIDENTIAL FINANCIAL INQUIRY

is an applicant for a position with this Department. The applicant has indicated in his personnel application that he is indebted to you for the amount of \$ \_\_\_\_\_, Loan or Account No. \_\_\_\_\_.

We request that you fill in this form and return it in the enclosed stamped envelope at the earliest possible time. Your reply will be treated **STRICTLY CONFIDENTIAL** in accordance with Section 1881, Sub 5 of the California Code of Civil Procedure, "A public officer cannot be examined as to communications made to him in official confidence when the public interest would suffer by the disclosure."

CHIEF OF POLICE

REPORT OF LOAN OR ACCOUNT STATUS			
DATE LOAN OR CHARGE INCURRED	ORIGINAL AMOUNT	AMOUNT CURRENTLY OUTSTANDING	OBJECT OF INDEBTEDNESS
TERMS OF REPAYMENT (On a weekly, monthly, or yearly basis. Other.)			AMOUNT DUE EACH PAYMENT
HAS HE EVER BEEN DELINQUENT ON PAYMENTS? <input type="checkbox"/> YES <input type="checkbox"/> NO. IF YES, HOW MANY TIMES? (Please give dates & how late on each payment)			
HAS IT NECESSARY TO CONTACT HIM? <input type="checkbox"/> YES <input type="checkbox"/> NO. IF HE WAS CONTACTED, WHAT ACTION OR TYPE OF RESPONSE DID YOU RECEIVE?			
DO YOU HAVE A RECORD OF OTHER INDEBTEDNESS INCURRED BY APPLICANT? <input type="checkbox"/> YES <input type="checkbox"/> NO. IF YES, PLEASE LIST CREDITORS.			
NAME	ADDRESS		TELEPHONE
DO YOU CONSIDER THE APPLICANT A GOOD CREDIT RISK? <input type="checkbox"/> YES <input type="checkbox"/> NO. IF ANSWER IS NO, PLEASE EXPLAIN.			
SIGNATURE OF INDIVIDUAL PREPARING REPORT		POSITION	DATE
FINANCIAL INQUIRY WAIVER			
I request and authorize you to furnish the Los Angeles Police Department any and all information, including confidential or privileged communications, concerning present or past indebtedness to you or your organization. This information is to be used to assist in determining my fitness for the position I am seeking with the Los Angeles Police Department. I hereby release you, your employer or others from any liability or damage which may result from furnishing the information requested.			
Signature of Applicant _____			

## AUTHORIZATION FOR RELEASE OF MILITARY AND MEDICAL INFORMATION

TO:	DATE
	NAME OF APPLICANT - PRINTED

AS AN APPLICANT FOR A POSITION WITH THE LOS ANGELES POLICE DEPARTMENT, I AM REQUIRED TO FURNISH INFORMATION FOR USE IN DETERMINING MY MORAL, PHYSICAL, AND MENTAL QUALIFICATIONS. IN THIS CONNECTION, I AUTHORIZE RELEASE OF THE INFORMATION ITEMS BELOW FROM MY MILITARY AND RELATED MEDICAL RECORDS.

BRANCH OF SERVICE	SERVICE NO.	DATE LAST SEPARATED FROM ACTIVE SERVICE
PRESENT MILITARY STATUS <input type="checkbox"/> NONE <input type="checkbox"/> AIR FORCE RESERVE <input type="checkbox"/> ARMY RESERVE <input type="checkbox"/> NAVAL RESERVE <input type="checkbox"/> MARINE CORPS RESERVE		PRESENT HOME ADDRESS
FURNISH INFORMATION TO: Commanding Officer, Personnel Division Los Angeles Police Department 150 No. Los Angeles Street Mailing Address: P.O. Box 30158 Los Angeles, California 90030		APPLICANT FOR POSITION OF:  SIGNATURE OF APPLICANT X

## TO BE COMPLETED BY RECORDS OFFICE

DATE OF ENTRY	DATE SEPARATED	REASON FOR SEPARATION	CHARACTER OF SERVICE

NOTE: If discharge other than "HONORABLE," no further information is required.

DISCIPLINARY DATA - IF ANY	<input type="checkbox"/> NONE	<input type="checkbox"/> SEE REMARKS
SIGNIFICANT ILLNESS OR INJURIES - IF ANY	<input type="checkbox"/> NONE	<input type="checkbox"/> SEE REMARKS <input type="checkbox"/> SEE ATTACHED DOCUMENTS
PSYCHIATRIC OBSERVATIONS AND TREATMENT - IF ANY	<input type="checkbox"/> NONE	<input type="checkbox"/> SEE REMARKS <input type="checkbox"/> SEE ATTACHED DOCUMENTS
PHYSICAL CONDITION AT TIME OF SEPARATION	<input type="checkbox"/> REPORT OF SEPARATION PHYSICAL ATTACHED	

REMARKS:

☐ CONTINUED  
ON REVERSE

RELEASING OFFICE	RELEASED BY (SIGNATURE)	DATE RELEASED
------------------	-------------------------	---------------

# POLICE APPLICANT RECORD

READ INSTRUCTIONS CAREFULLY: This information must be accurately reported because it will be used as a basis for a detailed investigation of your background. Answer all questions which apply to you (if additional space is required use supplemental sheet). All information shall be typed or printed legibly by applicant. To aid you in obtaining correct addresses a directory service is available at the Los Angeles Public Library, 630 W. 5th St. which covers major cities throughout the United States.

DATE CIV. SERV. APPLICATION FILED		POSITION FILED FOR		INTERVIEWED BY		DATE	
MONTH	YEAR			FINGERPRINTED BY		DATE	
Legal Name: LAST FIRST MIDDLE				PHOTOGRAPHED BY		DATE	
BY WHAT OTHER NAMES HAVE YOU BEEN KNOWN? (Maiden, Nickname or Alias)				DATE OF BIRTH			
PLACE OF BIRTH (City, State or Country)				IF NATURALIZED CITIZEN, LIST CITY, STATE & CERTIFICATE NO.		DATE NATURALIZED	
SEX	HAIR	EYES	HEIGHT	WEIGHT	AGE	DRIVER'S LICENSE NO.	STATE
RESIDENCE ADDRESS (Number, Street, City, State, Zip)				RESIDENCE PHONE		WITH WHOM DO YOU LIVE?	
EMPLOYMENT ADDRESS (Number, Street, City, Zip)				BUSINESS PHONE-EXT.		SOCIAL SECURITY NUMBER	
PRESENT MARITAL STATUS: <input type="checkbox"/> SINGLE <input type="checkbox"/> MARRIED <input type="checkbox"/> SEPARATED <input type="checkbox"/> DIVORCED <input type="checkbox"/> WIDOWED				CITY & STATE PRESENT MARRIAGE PERFORMED		DATE PRESENT MARRIAGE PERFORMED	

## PRESENT SPOUSE:

NAME (First & Middle)		MAIDEN NAME & OTHER NAMES USED		ADDRESS IF DIFFERENT THAN ABOVE	
HAIR	EYES	HEIGHT	WEIGHT	BIRTHDATE	NAME & ADDRESS OF EMPLOYER (Include Number, Street, City, State, Zip)

## PRIOR MARRIAGES: IF DIVORCED OR ANNULLED, LIST PRIOR MARRIAGES IN ORDER OF OCCURRENCE.

NAME OF FORMER SPOUSE (Last, First, Middle)		CITY & STATE WHERE FORMER MARRIAGE WAS PERFORMED		DATE OF MARRIAGE	
ADDRESS OF FORMER SPOUSE		GROUNDS FOR DIVORCE OR ANNULMENT		WHO INSTITUTED SUIT?	
TITLE AND LOCATION OF COURT ISSUING DIVORCE OR ANNULMENT		FILE NO.		AMOUNT CHILD SUPPORT	
				DATE FINAL DIVORCE FILED	

REFERENCES: CAREFULLY COMPLETE THE FOLLOWING ON FOUR PERSONS OTHER THAN RELATIVES OR PAST EMPLOYERS, WHO KNOW YOU WELL ENOUGH TO GIVE CURRENT OR PAST INFORMATION ABOUT YOU. IF THE PERSON'S EMPLOYER IS OUTSIDE THE STATE OF CALIFORNIA, OMIT ALL INFORMATION RELATIVE TO HIS EMPLOYER. THE AGE OF PERSONS LISTED SHOULD BE WITHIN 10 YEARS OF YOUR OWN AGE.

NAME (Last, First, Middle)		MAILING ADDRESS		CITY		STATE		RESIDENCE PHONE	
1	SEX	RACE	HAIR	EYES	HEIGHT	WEIGHT	BIRTHDATE OR AGE	KNOWN HOW LONG?	
EMPLOYER'S NAME AND ADDRESS				CITY		STATE		WORK HOURS	
								BUSINESS PHONE - EXT	
NAME (Last, First, Middle)		MAILING ADDRESS		CITY		STATE		RESIDENCE PHONE	
2	SEX	RACE	HAIR	EYES	HEIGHT	WEIGHT	BIRTHDATE OR AGE	KNOWN HOW LONG?	
EMPLOYER'S NAME AND ADDRESS				CITY		STATE		WORK HOURS	
								BUSINESS PHONE - EXT	
NAME (Last, First, Middle)		MAILING ADDRESS		CITY		STATE		RESIDENCE PHONE	
3	SEX	RACE	HAIR	EYES	HEIGHT	WEIGHT	BIRTHDATE OR AGE	KNOWN HOW LONG?	
EMPLOYER'S NAME AND ADDRESS				CITY		STATE		WORK HOURS	
								BUSINESS PHONE - EXT	
NAME (Last, First, Middle)		MAILING ADDRESS		CITY		STATE		RESIDENCE PHONE	
4	SEX	RACE	HAIR	EYES	HEIGHT	WEIGHT	BIRTHDATE OR AGE	KNOWN HOW LONG?	
EMPLOYER'S NAME AND ADDRESS				CITY		STATE		WORK HOURS	
								BUSINESS PHONE - EXT	

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# FAMILY HISTORY

Page 2

IF ANY OF YOUR RELATIVES ARE DECEASED INSERT THE DATE OF DEATH IN THE ADDRESS SPACE

F A T H E R	NAME OF NATURAL FATHER (Last, First, Middle)		BIRTHDATE	
	ADDRESS (Number, Street, City, State, Zip)		HAIR	EYES HEIGHT WEIGHT
M O T H E R	MAIDEN NAME OF NATURAL MOTHER (Last, First, Middle)		BIRTHDATE	
	ADDRESS (Number, Street, City, State, Zip)		HAIR	EYES HEIGHT WEIGHT

OTHER RELATIVES: LIST THOSE RELATIVES WHICH APPLY TO YOU IN THE FOLLOWING SEQUENCE: (1) BROTHERS (2) SISTERS (3) STEP-FATHER (4) STEPMOTHER (5) FATHER-IN-LAW (6) MOTHER-IN-LAW (7) GUARDIANS AND/OR FOSTER PARENTS

NAME (Last, First, Middle)	RELATIONSHIP	BIRTHDATE
ADDRESS (Number, Street, City, State, Zip)	HAIR	EYES HEIGHT WEIGHT
NAME (Last, First, Middle)	RELATIONSHIP	BIRTHDATE
ADDRESS (Number, Street, City, State, Zip)	HAIR	EYES HEIGHT WEIGHT
NAME (Last, First, Middle)	RELATIONSHIP	BIRTHDATE
ADDRESS (Number, Street, City, State, Zip)	HAIR	EYES HEIGHT WEIGHT
NAME (Last, First, Middle)	RELATIONSHIP	BIRTHDATE
ADDRESS (Number, Street, City, State, Zip)	HAIR	EYES HEIGHT WEIGHT
NAME (Last, First, Middle)	RELATIONSHIP	BIRTHDATE
ADDRESS (Number, Street, City, State, Zip)	HAIR	EYES HEIGHT WEIGHT
NAME (Last, First, Middle)	RELATIONSHIP	BIRTHDATE
ADDRESS (Number, Street, City, State, Zip)	HAIR	EYES HEIGHT WEIGHT
NAME (Last, First, Middle)	RELATIONSHIP	BIRTHDATE
ADDRESS (Number, Street, City, State, Zip)	HAIR	EYES HEIGHT WEIGHT
NAME (Last, First, Middle)	RELATIONSHIP	BIRTHDATE
ADDRESS (Number, Street, City, State, Zip)	HAIR	EYES HEIGHT WEIGHT

## CHILDREN:

<input type="checkbox"/> SON <input type="checkbox"/> DAUGHTER	NAME (Last, First, Middle)	BIRTHDATE	BIRTHPLACE (City & State)
ADDRESS (if different from your address)		RELATIONSHIP TO YOU <input type="checkbox"/> NATURAL <input type="checkbox"/> STEP <input type="checkbox"/> FOSTER <input type="checkbox"/> ADOPTED	RELATIONSHIP TO YOUR SPOUSE <input type="checkbox"/> NATURAL <input type="checkbox"/> STEP <input type="checkbox"/> FOSTER <input type="checkbox"/> ADOPTED
<input type="checkbox"/> SON <input type="checkbox"/> DAUGHTER	NAME (Last, First, Middle)	BIRTHDATE	BIRTHPLACE (City & State)
ADDRESS (if different from your address)		RELATIONSHIP TO YOU <input type="checkbox"/> NATURAL <input type="checkbox"/> STEP <input type="checkbox"/> FOSTER <input type="checkbox"/> ADOPTED	RELATIONSHIP TO YOUR SPOUSE <input type="checkbox"/> NATURAL <input type="checkbox"/> STEP <input type="checkbox"/> FOSTER <input type="checkbox"/> ADOPTED
<input type="checkbox"/> SON <input type="checkbox"/> DAUGHTER	NAME (Last, First, Middle)	BIRTHDATE	BIRTHPLACE (City & State)
ADDRESS (if different from your address)		RELATIONSHIP TO YOU <input type="checkbox"/> NATURAL <input type="checkbox"/> STEP <input type="checkbox"/> FOSTER <input type="checkbox"/> ADOPTED	RELATIONSHIP TO YOUR SPOUSE <input type="checkbox"/> NATURAL <input type="checkbox"/> STEP <input type="checkbox"/> FOSTER <input type="checkbox"/> ADOPTED
<input type="checkbox"/> SON <input type="checkbox"/> DAUGHTER	NAME (Last, First, Middle)	BIRTHDATE	BIRTHPLACE (City & State)
ADDRESS (if different from your address)		RELATIONSHIP TO YOU <input type="checkbox"/> NATURAL <input type="checkbox"/> STEP <input type="checkbox"/> FOSTER <input type="checkbox"/> ADOPTED	RELATIONSHIP TO YOUR SPOUSE <input type="checkbox"/> NATURAL <input type="checkbox"/> STEP <input type="checkbox"/> FOSTER <input type="checkbox"/> ADOPTED

# FAMILY HISTORY

# FINANCIAL INFORMATION

FINANCIAL RESPONSIBILITY: LIST ALL FINANCIAL OBLIGATIONS FOR WHICH YOU ARE RESPONSIBLE. IF YOU HAVE NO CURRENT DEBTS, LIST PAID-UP ACCOUNTS WHICH MAY BE USED FOR CREDIT REFERENCE. LIST CREDIT CARDS, PAST AND PRESENT.				
1. TO WHOM OWED	DATE INCURRED	ORIGINAL AMOUNT	BALANCE	MO. PAYMENT
ADDRESS (Number, Street, City, State, Zip)	ACCOUNT NUMBER		PURPOSE OF LOAN OR DEBT	
2. TO WHOM OWED	DATE INCURRED	ORIGINAL AMOUNT	BALANCE	MO. PAYMENT
ADDRESS (Number, Street, City, State, Zip)	ACCOUNT NUMBER		PURPOSE OF LOAN OR DEBT	
3. TO WHOM OWED	DATE INCURRED	ORIGINAL AMOUNT	BALANCE	MO. PAYMENT
ADDRESS (Number, Street, City, State, Zip)	ACCOUNT NUMBER		PURPOSE OF LOAN OR DEBT	
4. TO WHOM OWED	DATE INCURRED	ORIGINAL AMOUNT	BALANCE	MO. PAYMENT
ADDRESS (Number, Street, City, State, Zip)	ACCOUNT NUMBER		PURPOSE OF LOAN OR DEBT	
5. TO WHOM OWED	DATE INCURRED	ORIGINAL AMOUNT	BALANCE	MO. PAYMENT
ADDRESS (Number, Street, City, State, Zip)	ACCOUNT NUMBER		PURPOSE OF LOAN OR DEBT	
6. TO WHOM OWED	DATE INCURRED	ORIGINAL AMOUNT	BALANCE	MO. PAYMENT
ADDRESS (Number, Street, City, State, Zip)	ACCOUNT NUMBER		PURPOSE OF LOAN OR DEBT	
7. TO WHOM OWED	DATE INCURRED	ORIGINAL AMOUNT	BALANCE	MO. PAYMENT
ADDRESS (Number, Street, City, State, Zip)	ACCOUNT NUMBER		PURPOSE OF LOAN OR DEBT	
PRESENT RESIDENCE: <input type="checkbox"/> RENTING <input type="checkbox"/> LEASING		MONTHLY RENT	TOTAL INDEBTEDNESS AND MONTHLY PAYMENTS (INCLUDING RENT)	
<input type="checkbox"/> LIVING WITH RELATIVES OR FRIENDS			INDEBTEDNESS	PAYMENTS
VEHICLES AND VEHICLE INSURANCE:				
YEAR, MAKE, BODY STYLE & LICENSE NO. OF VEHICLE OWNED AND/OR DRIVEN BY YOU				
NAME OF INSURED	NAME & ADDRESS OF INSURANCE CO. OR LOCAL AGENCY		POLICY NUMBER	PREMIUMS
YEAR, MAKE, BODY STYLE & LICENSE NO. OF VEHICLE OWNED AND/OR DRIVEN BY YOU				
NAME OF INSURED	NAME & ADDRESS OF INSURANCE CO. OR LOCAL AGENCY		POLICY NUMBER	PREMIUMS
FINANCIAL HISTORY: REFERENCES TO EX-SPOUSE APPLY ONLY TO THAT PERIOD DURING WHICH SHE WAS MARRIED TO YOU.				
<input type="checkbox"/> YES <input type="checkbox"/> NO	1. HAVE YOU, YOUR SPOUSE OR EX-SPOUSE EVER HAD YOUR WAGES ATTACHED?			
<input type="checkbox"/> YES <input type="checkbox"/> NO	2. HAVE YOU, YOUR SPOUSE OR EX-SPOUSE EVER BEEN A PARTY TO A SMALL CLAIMS OR OTHER COURT ACTION?			
<input type="checkbox"/> YES <input type="checkbox"/> NO	3. DO YOU, YOUR SPOUSE, OR EX-SPOUSE HAVE ANY IMMEDIATE CIVIL ACTION PENDING AGAINST YOU?			
<input type="checkbox"/> YES <input type="checkbox"/> NO	4. HAVE YOU, YOUR SPOUSE, OR EX-SPOUSE EVER HAD A JUDGMENT RENDERED AGAINST YOU?			
<input type="checkbox"/> YES <input type="checkbox"/> NO	5. HAVE YOU, YOUR SPOUSE, OR EX-SPOUSE EVER FILED FOR BANKRUPTCY OR BEEN DECLARED BANKRUPT?			
<input type="checkbox"/> YES <input type="checkbox"/> NO	6. HAVE YOU EVER BEEN DECLARED DELINQUENT IN CHILD SUPPORT PAYMENTS ORDERED BY THE COURTS?			
<input type="checkbox"/> YES <input type="checkbox"/> NO	7. HAVE YOU EVER BEEN REFUSED A LIFE, AUTOMOBILE, HEALTH, OR OTHER INSURANCE POLICY?			
<input type="checkbox"/> YES <input type="checkbox"/> NO	8. HAVE YOU EVER HAD A LIFE, AUTOMOBILE, HEALTH, OR OTHER INSURANCE POLICY CANCELLED?			
<input type="checkbox"/> YES <input type="checkbox"/> NO	9. HAVE YOU EVER BEEN REFUSED CREDIT?			
<input type="checkbox"/> YES <input type="checkbox"/> NO	10. HAVE YOU, YOUR SPOUSE, OR EX-SPOUSE EVER HAD ANY PROPERTY REPOSSESSED?			
<input type="checkbox"/> YES <input type="checkbox"/> NO	11. HAVE YOU EVER BEEN BONDED OR HAD A BOND REFUSED?			
<input type="checkbox"/> YES <input type="checkbox"/> NO	12. IF EMPLOYED BY THE POLICE DEPARTMENT, DO YOU ANTICIPATE ANY INCOME OTHER THAN YOUR POLICE SALARY?			
NOTE: WHEN THE ANSWER TO ANY OF THE ABOVE QUESTIONS IS "YES" GIVE COMPLETE DETAILS, INCLUDING DATES AND LOCATIONS, ON THE BOTTOM PORTION OF THE FOLLOWING PAGE.				

LAPD 01.52.0 (7-69)

FINANCIAL INFORMATION

Page 3

Page 4

MONTH AND YEAR		ADDRESS (No. St.-specify N. S. E. W. St, Dr, PL-City, State, Zip)	WITH WHOM DID YOU LIVE?	RELATIONSHIP
1	FROM: TO:			
2	FROM: TO:			
3	FROM: TO:			
4	FROM: TO:			
5	FROM: TO:			
6	FROM: TO:			
7	FROM: TO:			
8	FROM: TO:			
9	FROM: TO:			
10	FROM: TO:			
11	FROM: TO:			
12	FROM: TO:			

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or printed text on the paper.



## EMPLOYMENT HISTORY

LIST YOUR COMPLETE WORK HISTORY IN REVERSE ORDER, BEGINNING WITH YOUR PRESENT STATUS. INCLUDE ALL PART-TIME JOBS, PERIODS OF UNEMPLOYMENT, AND MILITARY SERVICE.

<input type="checkbox"/> YES <input type="checkbox"/> NO		HAVE YOU EVER RECEIVED UNEMPLOYMENT COMPENSATION?		
FROM: MO.	YR.	NAME OF EMPLOYER (Name of Co. or Business)	JOB TITLE	DO YOU OBJECT TO OUR CONTACTING YOUR PRESENT EMPLOYER PRIOR TO YOUR BEING ACCEPTED? <input type="checkbox"/> YES <input type="checkbox"/> NO
TO: MO.	YR.	ADDRESS OF EMPLOYER (No., St., City, State, Zip)	DESCRIPTION OF DUTIES	
TOTAL TIME EMP.	SALARY			
YRS.	MOS.			
FROM: MO.	YR.	NAME OF EMPLOYER (Name of Co. or Business)	JOB TITLE	REASON FOR LEAVING
TO: MO.	YR.	ADDRESS OF EMPLOYER (No., St., City, State, Zip)	DESCRIPTION OF DUTIES	
TOTAL TIME EMP.	SALARY			
YRS.	MOS.			
FROM: MO.	YR.	NAME OF EMPLOYER (Name of Co. or Business)	JOB TITLE	REASON FOR LEAVING
TO: MO.	YR.	ADDRESS OF EMPLOYER (No., St., City, State, Zip)	DESCRIPTION OF DUTIES	
TOTAL TIME EMP.	SALARY			
YRS.	MOS.			
FROM: MO.	YR.	NAME OF EMPLOYER (Name of Co. or Business)	JOB TITLE	REASON FOR LEAVING
TO: MO.	YR.	ADDRESS OF EMPLOYER (No., St., City, State, Zip)	DESCRIPTION OF DUTIES	
TOTAL TIME EMP.	SALARY			
YRS.	MOS.			
FROM: MO.	YR.	NAME OF EMPLOYER (Name of Co. or Business)	JOB TITLE	REASON FOR LEAVING
TO: MO.	YR.	ADDRESS OF EMPLOYER (No., St., City, State, Zip)	DESCRIPTION OF DUTIES	
TOTAL TIME EMP.	SALARY			
YRS.	MOS.			
FROM: MO.	YR.	NAME OF EMPLOYER (Name of Co. or Business)	JOB TITLE	REASON FOR LEAVING
TO: MO.	YR.	ADDRESS OF EMPLOYER (No., St., City, State, Zip)	DESCRIPTION OF DUTIES	
TOTAL TIME EMP.	SALARY			
YRS.	MOS.			
FROM: MO.	YR.	NAME OF EMPLOYER (Name of Co. or Business)	JOB TITLE	REASON FOR LEAVING
TO: MO.	YR.	ADDRESS OF EMPLOYER (No., St., City, State, Zip)	DESCRIPTION OF DUTIES	
TOTAL TIME EMP.	SALARY			
YRS.	MOS.			
FROM: MO.	YR.	NAME OF EMPLOYER (Name of Co. or Business)	JOB TITLE	REASON FOR LEAVING
TO: MO.	YR.	ADDRESS OF EMPLOYER (No., St., City, State, Zip)	DESCRIPTION OF DUTIES	
TOTAL TIME EMP.	SALARY			
YRS.	MOS.			
FROM: MO.	YR.	NAME OF EMPLOYER (Name of Co. or Business)	JOB TITLE	REASON FOR LEAVING
TO: MO.	YR.	ADDRESS OF EMPLOYER (No., St., City, State, Zip)	DESCRIPTION OF DUTIES	
TOTAL TIME EMP.	SALARY			
YRS.	MOS.			
FROM: MO.	YR.	NAME OF EMPLOYER (Name of Co. or Business)	JOB TITLE	REASON FOR LEAVING
TO: MO.	YR.	ADDRESS OF EMPLOYER (No., St., City, State, Zip)	DESCRIPTION OF DUTIES	
TOTAL TIME EMP.	SALARY			
YRS.	MOS.			
<input type="checkbox"/> YES <input type="checkbox"/> NO HAVE YOU EVER BEEN TERMINATED OR AWAY TO RESIGN FROM A JOB (IF YES, EXPLAIN ON SUPPLEMENTAL SHEET.)				

IF YOU HAVE EVER APPLIED FOR A POSITION WITH ANOTHER LAW ENFORCEMENT OR OTHER GOVERNMENT AGENCY, COMPLETE THE FOLLOWING:

NAME OF DEPARTMENT OR AGENCY	DATE APPLIED	ACCEPTED? <input type="checkbox"/> YES <input type="checkbox"/> NO	REASON FOR REJECTION OR DECLINING APPOINTMENT



ARREST and MILITARY DISCIPLINE RECORD

TRAFFIC CITATIONS AND ACCIDENTS:

1. <input type="checkbox"/> YES <input type="checkbox"/> NO		HAVE YOU RECEIVED ANY TRAFFIC CITATIONS WITHIN THE PAST 3 YEARS? (Except Parking & Equipment Violations) IF "YES", COMPLETE THE FOLLOWING FOR EACH CITATION.	
YEAR	CHARGE OR TYPE OF VIOLATION	ISSUING AGENCY	PENALTY OR FINE
YES	NO	2. HAVE YOU EVER BEEN INVOLVED IN A TRAFFIC ACCIDENT AS A DRIVER?	

**PRIOR CONTACT WITH LAW ENFORCEMENT AGENCIES:**

YES	NO	3. HAVE YOU EVER BEEN CONTACTED, INTERVIEWED, QUESTIONED, OR OBTAINED FOR INVESTIGATION OR ARRESTED BY ANY POLICE DEPARTMENT OR OTHER RELATED ENFORCEMENT AGENCY, EITHER AS A JUVENILE OR AN ADULT? LIST ALL CONTACTS (NO EXCEPTIONS)
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**MILITARY DISCIPLINE:**

YES	NO	4. WERE YOU EVER INVOLVED IN A DISCIPLINARY ACTION IN THE MILITARY SERVICE? (ARTICLE 15, OFFICE HOURS, CAPTAIN'S MAST COURT MARTIAL)
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If the answer to 2,3, or 4 above is Yes, write a detailed account of each incident below, beginning with most recent case.

This image shows a single page of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is a vertical margin line on the left side, creating a narrow left margin. The paper appears to be from a notebook or a standard ruled sheet of paper.

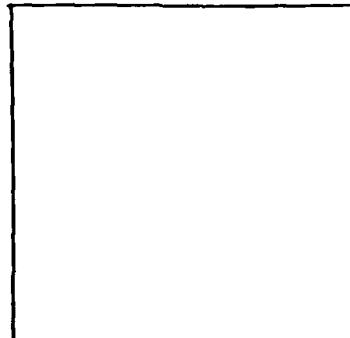
## Page 6

SUPPLEMENTAL SHEET  
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Los Angeles Police Department  
PERSONAL INQUIRY WAIVER

TO: \_\_\_\_\_

APPLICANT'S PHOTO



I respectfully request and authorize you to furnish the Los Angeles Police Department any and all information that you may have concerning me, my work record, my reputation, my financial and credit status. Please include any and all medical, physical and mental records or reports including all information of a confidential or privileged nature, and photostats of same if requested. This information is to be used to assist the Department in determining my qualifications and fitness for the position I am seeking with the Los Angeles Police Department.

I hereby release you, your organization or others from any liability or damage which may result from furnishing the information requested above.

Applicant's Signature \_\_\_\_\_ Date \_\_\_\_\_

NOTE: This form may be retained in your files.

ANNEX 3

LOS ANGELES COUNTY SHERIFF'S DEPARTMENT

Interviewees: Lt. Mike J. McAndrews  
Training Bureau  
Los Angeles County Sheriff's Department

Lt. Jay Wickler  
Training Bureau  
Los Angeles County Sheriff's Department

Lt. Lee A. Davenport  
Pre-Employment Investigations  
Personnel Bureau  
Los Angeles County Sheriff's Department

Interviewer: Leaetta Hough

Date: 19 July 1984, 10:00 a.m.

Selection

At the time the application is completed, an initial screening occurs. This screening is a check that the person is 21, has a high school diploma or GED, and has a driver's license. At this time, the candidate is scheduled to come in for the written exam. In 1983, 13,462 applied for the deputy sheriff position. Of this group, 8,564 showed up for the written exam. (A no-show at any time in the selection process is a disqualifier.) The written exam measures reading skills, writing skills, and reasoning ability. Last year, of the group who showed up for the written exam, 64%, or 5508 people, passed the exam. Those who pass are scheduled for a Physical Agility Test (PAT) which consists of running, dragging a body, and simulating handcuffing a person (forcing two bars together, requires 60 pounds force). A number of females are lost at this point. As a result, some number of people who fail the PAT are scheduled for remedial training. Those who pass the above hurdles are scheduled for the oral interview.

The oral interview determines one's ranking on the eligibility list. It is an evaluation of each candidate's overall fitness for the job, motivation, and understanding of the job. Two deputies, who are randomly selected from the ranks of deputy or sergeant, sit on the board. They choose three hypothetical questions from a set of six or seven. They also go through the resume and past job experiences. The maximum score is 100; passing is 70.

The next step in the selection process is the background investigation. Included in this part of the process is the medical exam, the psychological exam (if necessary), and the polygraph (if necessary). Each applicant completes a fifteen-page questionnaire, called the pre-polygraph questionnaire. There can be no omissions and no falsifications. If there are, the person is disqualified. The threat of a polygraph is, apparently, enough to cause many people to withdraw their application. The investigator receives the file and checks the financial or credit history, school

records, employment history, home life, criminal history, drug history (can't have used marijuana in the last year, can't have ever used hallucinatory drugs), driving record (three tickets in one year is a disqualifier), etc. The background investigation focuses primarily on gathering information about the applicant's moral character, stability, and responsibility. The investigator can request the applicant have a psychological exam and/or a polygraph. The psychological exam consists of an MMPI and an in-depth interview with a psychologist (an attempted suicide is an automatic disqualifier). If a polygraph is done, they go through everything.

The investigator writes up a summary of the findings from the background investigation. The Captain of the Personnel Bureau makes the final decision. As with the written exam and the physical, the background investigation is used only to select out.

The characteristics the Los Angeles Sheriff's Department is looking for in deputy sheriffs are:

- . common sense,
- . maturity,
- . personality,
- . attitude,
- . motivation,
- . independent judgment,
- . interpersonal skills,
- . writing ability, and
- . physical fitness.

Attachment 1 shows the 1983 hiring statistics for the Los Angeles Sheriff's Department.

### Training

The academy is a combination junior college, boot camp. It is, in their words, an "extremely structured situation." It consists of eighteen weeks of training that includes physical fitness/exercise, role-playing, simulations (such as death notification, search, pull-over and approach, officer involved shootings), ride-alongs, combat training, training with arms, officer survival safety, Spanish classes, deafness awareness classes, gay awareness classes, cultural exchange, courtroom demeanor, etc. The qualities they emphasize and look for in cadets and officers are attitude (willing and hard worker), conduct, motivation, self-discipline, team work, physical fitness, and compassion. Of those people who do not complete training, most are lost during the first eight weeks. They feel most are lost for "attitude" reasons, i.e., the cadet is overwhelmed by the discipline, doesn't want that kind of discipline, or is unwilling to make the sacrifice.

They said they do not artificially induce stress into the academy. There is no intimidation, no attempt to "break a person." In fact, they try to accommodate the cadets' needs. They are human relations oriented and flexible in their approach to problems encountered during training.

In addition to the training component, the academy is considered a part of the screening process and is used to identify persons not fit for police work. Such people were characterized as lacking maturity, common sense, motivation, and the proper personality or attitude. The full range of conduct and performance at the academy is evaluated, critiqued, and discussed with each individual. They evaluate the officers by observing their reactions in the role playing exercises and simulations. Examples of cadet actions that are unacceptable are: a) the person won't defend him or herself, b) he or she overuses a weapon (i.e., has a gun drawn in inappropriate situations, c) is a bully or, d) freezes. The cadets also evaluate each other - peer evaluations. These are not used to eliminate people, but if negative information from peers corroborates the staff's opinion, they will use the information to remove the person from the training program. Peer evaluations are done twice, at six and twelve weeks into training.

Late in the training program, they have a family orientation night. Family members meet the staff, talk to the platoon leader one-on-one, and learn about what the job of a sheriff's deputy is all about. When the eighteen weeks of training are complete, they have a celebration which includes spouses.

Additional training that occurs later in an officer's career is called Officer Advanced Training (OAT).

#### Monitoring

Reasons for failure on the job are misconduct and poor judgment.

Formal performance evaluation is done once per year. They use the standard county performance form that is used for most county employees. After the performance discussion with the supervisor, the officer reads and signs the form.

They do not do urine analyses except as part of the medical exam.

If an officer is in possession of marijuana, they can not fire the person. They said that, in California, possession of marijuana is less of a crime than drunken driving, and they can't fire for drunken driving either. They can fire someone if he or she is convicted of a felony. If the person is in possession of heroin or coke, the person is fired.

#### Miscellaneous Information and Comments

- . There are 6,000 sworn officers.
- . Once officers complete training, their first assignment is guard duty at jail. That assignment used to be for three to four years; now it's one to two years. Most officers dislike this assignment and attrition was a problem. They said most of the officers are action-oriented, adventurous types and they dislike guard duty. The training department has initiated a training program for these people to help their morale. The training is characterized as



high profile, active, adventure type skill training. It includes such things as pull-over and approach, search, officer-involved shootings, etc. They have reduced the turnover by addressing the interests of these people. They think this sort of intervention may be helpful in any situation that incumbents feel is monotonous or if they feel side-lined.

- . About 1% of the force, perhaps 60-100 people, are a part of SWAT. It is "an assignment unto itself," the officers do a lot of training, and are involved in saturation patrol, special needs, dignitary protection, and crisis situations. In this position, the department wants a person who is highly disciplined and in excellent physical condition.
- . Perhaps 30% of the officers have BA degrees.
- . The sheriff's department says they are looking for the same kind of people as police departments do. In fact, the Los Angeles Sheriff's Department trains many police officers from around the country.
- . They feel that the realistic job previews they now do describing the training, the custody assignment, and the black-and-white patrol assignment, has had a positive impact on reducing turnover.
- . They feel that writing is a very important skill, even more important when an officer has custody duty, yet many of the officers can not write well enough to do the job. They feel entry standards for writing ability should be raised.
- . When asked about any problems they might have with the Freedom of Information Act and the Privacy Act, they said those Acts did not apply to them. They said the sorts of constraints that private employers are under do not apply to police departments. They also said they have applicants sign waivers to ensure that the Los Angeles Sheriff's Department is not liable.

Interviewee: Geraldine Burns  
Psychologist  
Psychological Services

Interviewer: Leaetta M. Hough

Date: 19 July 1984, 3:00 p.m.

This is the office to which Los Angeles County Sheriff's Department candidates come if they are "ify". That is, if the background investigation is uncertain about them, the investigator recommends a psychological evaluation. These candidates tend to be tight and overcontrolled. They see the world in black and white terms, good versus evil. They tend to over-react.

This office's main function, however, is to provide counseling on a confidential basis to the Sheriff's Department personnel and their families. Over half the force has used the services of this unit. To increase the confidentiality of this service, this unit is physically several blocks away from any other Sheriff's Department offices or facilities.

The primary reason people come here is for relationship problems. Some are job-related; they forget how to relate to people other than in an authoritarian manner. Some shifts (e.g., the graveyard) are especially disruptive to family life. She also said that working twelve to fourteen hour days in order to get the paperwork done, then going to court the next day, is very tiring and hard on one's family and personal life.

When asked about the stressful aspects of the deputy sheriff job, Dr. Burns said the most stressful time is when the trainee is at the station and the training officer has total power over him. Some of these training officers are old-fashioned and overly conservative. She alluded, but did not directly say, that these were men who were not particularly happy to have women on the force. Dr. Burns did say that the women on the force are probably a cut above the men, that they have to put up with hazing, that they have to prove they are competent. Many of the men assume the women are not competent. She said the women need more fortitude than men to make it in the deputy sheriff job.

Dr. Burns did not feel that the custody assignment was particularly stressful. At least, the people who come to see her are not here for that reason. She said that assignment has regular working hours, is structured, and unambiguous; it's clear what you have to do. (It seems to me that people do not go to counselors or psychologists because they are bored; people generally know how to handle that. In this sense, Dr. Burns is probably right. The custody assignment is not that stressful. It may, however, be an important determinant in turnover.)

Attachment 1

Los Angeles Sheriff's Department

1983 Hiring Statistics

1983 Hiring Statistics  
Deputy Sheriff Trainee Only

Persons who applied for Deputy Sheriff	100.0%
Persons who appeared and passed the written examination	41.0%
Persons who passed the written examination and physical agility test	23.5%
Persons who passed written examination, physical agility test, and oral interview	16.5%
Persons who were hired	5.2%

APPLICATION

Persons who APPLIED for Deputy Sheriff	13,462	100%
Males	10,707	80%
Females	2,755	20%

(Recruitment total results)

WRITTEN EXAMINATION

Persons who FAILED TO SHOW UP for written examination	4,898	36%
Males	3,720	76%
Females	1,178	24%

(Recruitment failure to keep interest or misdirected efforts)

Persons who TOOK written examination	8,564	64%
Males	6,987	82%
Females	1,577	18%

(Recruitment success)

Persons who PASSED the written examination	5,508	64%
Males	4,629	84%
Females	879	16%

(Difficulty of examination)

WRITTEN EXAMINATION (CONTINUED)

Percentage from APPLICATION TO PASSING  
written examination. Total passing

5,508 41%

Males 4,629 43%

Females 879 32%

(Recruitment marketing effort)

Percentage who PASSED written examination BY SEX

Males 4,629 66%

Females 879 56%

(Difficulty of examination by sex)

PHYSICAL AGILITY TEST

Persons SCHEDULED to take the physical agility test	7,540	100%
Males	5,610	74%
Females	1,930	26%
Persons who FAILED TO SHOW UP for P.A.T.	665	9%
Males	368	55%
Females	297	45%
(Keeping interest and scheduling)		
Persons who TOOK P.A.T.	6,875	91%
Male	5,242	76%
Females	1,633	24%
(Success in keeping interest)		
Persons who PASSED the P.A.T.	4,315	63%
Males	3,988	92%
Females	327	8%
(Difficulty of test)		
Persons who failed and were scheduled for REMEDIAL TRAINING	1,114	16%
Males	551	49%
Females	563	51%
(Persons not prepared for P.A.T.)		

PHYSICAL AGILITY TEST (CONTINUED)

Persons who FAILED the P.A.T.	1,444	21%
Males	703	49%
Females	741	51%

(Persons not in physical condition to be a Deputy Sheriff)

Percentages from SCHEDULED for P.A.T. TO PASSING P.A.T.	4,315	57%
Males	3,988	71%
Females	327	17%

(Overall interest and success rate)

Percentage who TOOK AND PASSED P.A.T. by SEX

Males	76%
Females	20%

(Difficulty by sex)

Percentage who failed were scheduled for  
REMEDIAL TRAINING BY SEX

Males	11%
Females	35%

Percentage who FAILED P.A.T. BY SEX

Males	13%
Females	45%



# ORAL EXAMINATION

Persons SCHEDULED to take Oral Interview	4,594	100%
Males	4,265	93%
Females	329	7%

Persons who FAILED TO SHOW UP for Oral Interview	176	4%
Males	167	95%
Females	9	5%

(Keeping interest and scheduling)

Persons who TOOK Oral Interview	4,418	96%
Males	4,098	93%
Females	320	7%

(Success in keeping interest)

Persons who PASSED the Oral Interview	3,224	73%
Males	2,961	92%
Females	263	8%

(Difficulty of examination)

Percentage from SCHEDULED for Oral Interview TO PASSING Oral Interview	3,224	70%
Males	2,961	69%
Females	263	80%

(Overall interest and success rate)

Percentage who PASSED Oral Interview BY SEX		
Males		72%
Females		82%

(Difficulty by sex)

BACKGROUND INVESTIGATION

Persons Entering Backgrounds			3,224
Persons who Failed to appear during process	33	(1.0%)	3,191
Persons who Signed Off at Pre-Polygraph (weakness of oral examination)	547	(17.0%)	2,644
Persons who Failed medical	155	(4.8%)	2,489
Persons who Failed psychological	267	(8.3%)	2,221
Persons who were Withheld	252	(7.7%)	1,969
Persons who were Signed Off	1,272	(39.5%)	
Persons Hired		(21.7%)	697

ANNEX 4

WASHINGTON DC METROPOLITAN TRANSIT AUTHORITY

Interviewee: Inspector Burton Morrow  
Metro Transit Police  
Washington Metropolitan Area Transit Authority

Interviewer: Hough

Date: 5 June 1984

Selection

The selection system for both regular and special police officers consists of six basic steps. They are:

1. Application form - (Attachment 1 is the application form.) Approximately 2500 people apply each year, though Morrow was unsure of this number. The personnel department screens the application forms and forwards those applications that meet the following requirements:
  - (a) the applicant must have a high school diploma;
  - (b) the applicant must have a driver's license; and
  - (c) the application must be completed entirely and properly. That is, all questions must be answered completely and there can't be very many spelling errors. Captain Leacock then examines the forms to screen out persons with criminal records or other obviously disqualifying characteristics. About half of the applicants are screened out at this stage.
2. Psychological testing - The Personal Selection Inventory (PSI) developed by London House is administered. (As an introductory set to the selection process, the applicants are informed that if, at any time during the selection process, they are not truthful, they will be disqualified from further consideration.) The PSI measures four characteristics: (a) honesty (vs. such dishonesty as stealing); (b) non-violence; (c) non-use or non-abuse of drugs; and (d) a test-taking set. (My reading of the items indicates it is an Unlikely Virtues sort of scale, i.e., the scale detects persons who are endorsing unrealistically virtuous statements.) Metro accepts only those persons who have responded "honestly" to the items, i.e., receive a score greater than 10 on the test-taking scale and scored 70 or above on the honesty scale, 75 or above on the non-violence scale, and 70 or above on the non-drug use

scale. (These are on scales of 100. People scoring at or above the cut-offs are labelled "low risk".) Generally, approximately 50% of the applicants who complete the PSI surpass these minimum scores. Recently, 88 candidates completed the PSI and 33 passed. Presumably, London House has normative data, reliability evidence, and validity evidence for this instrument.) According to Chief MacLean, the PSI doesn't tell them who will be the good officers, instead it allows them to screen out those persons who are likely to be dishonest, violent, and substance users/abusers. (The PSI is included as Attachment 2.)

3. Interview - A three-person panel, generally consisting of a captain, a female, and a black, interview each candidate for approximately 30 minutes. (Attachment 3 is the set of interview questions and rating form.) An applicant must score 90 on a 100-point scale to move on to the next phase. This is a subjective overall evaluation. Just prior to the interview the applicant is given a question to which he or she must prepare a written response. After the interview, the interviewers review the short essay to evaluate the applicant's writing style. (Attachment 4 is the essay questions.) This evaluation is part of their overall evaluation of the candidate.
4. Personal history form - Two detectives in internal affairs conduct the background investigation. They check WALE (Washington Area Law Enforcement) and NCIC (the FBI's National Crime Information Center) for evidence of a criminal record. Anyone with a criminal record is eliminated. They verify that the high school certificate is valid (a certified high school diploma is required), verify the accuracy of the birth certificate, and also verify the college degree and/or transcript. They also do a neighborhood check to get face-to-face evaluation by neighbors. They also check childhood schools, credit rating, employers, references, and friends. A poor employment history is a knock-out factor. Throughout the selection process the applicants are told that any dishonesty in response to any question will result in disqualification. If, in the background investigation, they discover an inconsistency between what the individual said or indicated on a form and what the detectives find, the applicant is disqualified. The detective writes up a narrative of what he/she finds and places it in the applicant's folder. The folder is a complete register of the entire selection process. Detectives then summarize the background findings. If they see anything

out of the ordinary, they refer it to the captain for review. Approximately half of the applicants are screened out on the basis of the background investigation.

6. Medical/Physical Exam - The physical is done concurrent with the background investigation. There is a height and weight requirement. Eyes must be correctable to 20/30. Uncorrected eyesight can be no worse than 20/50 in the better eye, 20/60 in the poorer eye, and 20/50 together.

All of this information is kept in the applicant's file and those who have survived all six steps are reviewed by the Assistant Chief who makes the final decision. Approximately 20 people are hired each year, six or seven from turnover, the remaining are hired because the Metro is expanding each year and new positions are created.

#### Monitoring

Newly hired people for the "regular" police position are scheduled for training at the Police Academy in Northern Virginia.

The FBI has recently instituted a trigger-pull test because so many women were failing to qualify in arms. Everyone is required to pull the trigger a minimum of 40 times in a specified period of time before beginning training. During the 13-week course, officers are trained in police work and given knowledge and skill tests, which they must pass. Currently about 5%, maybe one per year, of the Metro trainees do not pass the training. Prior to the current selection system, they lost 25-30%, about 8 out of 30.

On-the-job monitoring is in two basic forms: supervisory awareness and an annual physical. Supervisors observe their subordinates for any difference in their conduct and/or appearance. The Watch Commander inspects everyone. During inspections, he is aware of each officer's eyes, breath, and whether or not the orders are understood. The department is especially sensitive about alcohol or drug use. If an officer is suspected of having used such substances, a urine analysis is done. If the person refuses the test, he or she is terminated. If there is any trace of drugs (other than a doctor's prescription or cold medicine) the sample is sent to Carolina for a detailed analysis. If there is evidence of drugs (the criterion for marijuana is over 10) the individual is terminated. Morrow says this is a strict policy and consequently drug use/abuse is nonexistent. (See Attachment 5 for a copy of this policy.)

After an accident, the officer involved undergoes a post-incident exam which includes a urine analysis and a breathalyzer, to ensure that drugs were not a factor. Also, all citizen complaints are investigated. If there are several complaints about a person, it suggests there is some kind of problem. If an officer is having problems related to his/her job performance, the supervisor can discuss it with the officer on-the-spot, schedule an interview/consultation with the officer. If drugs are suspected and confirmed, the individual is terminated. An interview/consultation gets recorded in the individual's personnel folder. Sometimes the solution is to reassign the individual -- perhaps an assignment with greater supervision, perhaps an assignment from mobile patrol to train station. If a person is not performing well, the department can deny a step-increase, and if the person hasn't improved in 90 days, they may consider terminating the officer. If disciplinary action is taken and the individual involved is a supervisor, the person can appeal the action. An appeals board handles such situations. If the individual is an officer, the union contract is relevant. In that case, a grievance procedure is followed.

Each year, each officer is scheduled for a physical. These are announced one or two days prior to the actual exam so the individual cannot cleanse his or her body of drugs. Part of the exam is a urine analysis. Another part of the exam is a check on the person's weight. If the person is overweight, he or she has a certain period of time to lose the weight.

#### Promotion

Promotion is based on a written exam, board review, and performance evaluations. They are weighted 60%, 30%, 10% respectively.

The test is developed by someone in the department. It consists of technical knowledge questions of Virginia and Maryland laws. They use questions with verbatim answers so that there is no subjectivity to what the correct answer is. It is in True/False format. After the test is scored, the applicants can review the test and their answers. If they disagree with any of the answers, they can appeal to the appeal board. The board reviews their reasons and decides if they should be given credit. If the person receives a 70 on the test they qualify for the interview. (Attachment 6 is a copy of the board evaluation form.)

The board consists of three members, similar to the selection interview board. The job performance evaluations are done yearly and are on a scale of 100. (Attachment 7 is a copy of the performance appraisal form.) Morrow said he feels that the performance evaluations are essentially all the same (i.e., there is little variance in them and as a result, the weighting system is probably not what they think. In fact, the weighting system is undoubtedly not what they think, in that scores are not converted to standard scores.)

#### Comments (Morrow's)

- . Morrow said he would like the polygraph added to the selection system.
- . The department has considered having someone else write the promotional exam.
- . Prior to the current selection system, (i.e., the PSI), they got many "rabble rousers". Now, the force is more tame.
- . Morrow would like to screen out persons who tend to be "complainers"; they cause lots of extra paperwork--grievance upon grievance.
- . Perhaps persons who are accident-prone, careless people could be screened out.
- . Morrow feels comfortable with the current selection procedure. He says that management likes it and that the union doesn't have anything to say about the selection procedure. He also said that the people who survive the screening feel proud to have made it, that the extensive selection process is a morale booster. The urine analysis is not perceived as an invasion of privacy.

#### Other information

- . The total number of "regular" officers is 255, of which 36 are supervisory (See Attachment 8)
- . The total number of "special" officers is 67, of which 14 are supervisory.
- . The screening requirements are the same for regular and special officers. Starting salary for regular officers is about \$19,000/year, special officers about \$13,000. The regular officer pay is the mean of the five top paying departments in the area. It is struc-

tured this way so that the Metro Police do not drain off officers from other departments.

- . Training for regular officers lasts about 13 weeks, special officers (which are like property guards) about 5 days.
- . Turnover for regular officers is about 3% per year, 6 or 7 people. Prior to current selection strategy, it was about 8%.
- . Turnover for special officers is quite a bit higher. The job is seen as a stepping-stone to other positions within the Metropolitan Area Transit Authority.
- . New hires are required to sign a two-year contract with Metro. If someone leaves sooner, they have to pay for part of their training. If, however, Metro disqualifies or dismisses an officer, the officer does not need to reimburse the department for training. According to Morrow, when a person graduates from the Academy, they are qualified to be an officer anywhere, and this is why Metro has the two-year contract. The officers attend the Police Academy in Northern Virginia and, according to Symonds, this does not qualify a person to be an officer anywhere in the country.
- . Morrow said the chief has an open door policy, that the department has a human and supportive approach to management.
- . The regular officers are:

68% white	10% female
31% black	90% male
1% Hispanic	
- . The entire staff including special officers and clerical are:

59% white	16% female
39% black	84% male
2% Hispanic	
- . Morrow said, of the regular officers, about 60% have a four-year degree in law enforcement, 70% have a four-year degree in something, and several people have MAS in law enforcement.



- . London House provides the department with a quarterly report (they maintain a data bank) which contains norms and documentation about fairness and adverse impact of the PSI.
- . The sequence of status designations is:
  - applicant
  - trainee
  - probationary status
  - officer

The union has no input into the selection process because it is all done prior to a person's becoming a part of the union.

- . When people call wanting to challenge the PSI, they are referred to London House. Apparently, no one has followed-up and called London House.
- . London House stands behind the PSI and apparently will defend it in court.
- . D.C. does not allow the polygraph.

Attachment 1  
Application Form



7

## Employment History

In the space provided below, give your employment history, beginning with your present or most recent employer and list all positions held, including military, part-time, summer, and any periods of unemployment.  
**AN EXPLANATION OF ANY PERIOD OF UNEMPLOYMENT MUST BE INCLUDED UNDER ITEM NO. 17 ON PAGE 4.**

If more space is required, please attach an additional sheet utilizing the same format

From: Mo. 1 Yr. To: Mo. 1 Yr.

a Name of Employer \_\_\_\_\_  
 Address \_\_\_\_\_  
 Phone Number \_\_\_\_\_  
 Area Code Number

Job Title \_\_\_\_\_  
 Name & Title of Supervisor \_\_\_\_\_  
 Reason(s) you left or would like to leave \_\_\_\_\_

Salary Beginning: \_\_\_\_\_ Per Year  
 Present Salary: \_\_\_\_\_ Per Year

May we contact? ☐ Yes ☐ No

Briefly describe the nature and duties of your position: \_\_\_\_\_

From: Mo. 1 Yr. To: Mo. 1 Yr.

b Name of Employer \_\_\_\_\_  
 Address \_\_\_\_\_  
 Phone Number \_\_\_\_\_  
 Area Code Number

Job Title \_\_\_\_\_  
 Name & Title of Supervisor \_\_\_\_\_  
 Reason(s) for leaving \_\_\_\_\_

Salary Beginning: \_\_\_\_\_ Per Year  
 Final Salary: \_\_\_\_\_ Per Year

Briefly describe the nature and duties of your position: \_\_\_\_\_

From: Mo. 1 Yr. To: Mo. 1 Yr.

c Name of Employer \_\_\_\_\_  
 Address \_\_\_\_\_  
 Phone Number \_\_\_\_\_  
 Area Code Number

Job Title \_\_\_\_\_  
 Name & Title of Supervisor \_\_\_\_\_  
 Reason(s) for leaving \_\_\_\_\_

Salary Beginning: \_\_\_\_\_ Per Year  
 Final Salary: \_\_\_\_\_ Per Year

Briefly describe the nature and duties of your position: \_\_\_\_\_

From: Mo. 1 Yr. To: Mo. 1 Yr.

d Name of Employer \_\_\_\_\_  
 Address \_\_\_\_\_  
 Phone Number \_\_\_\_\_  
 Area Code Number

Job Title \_\_\_\_\_  
 Name & Title of Supervisor \_\_\_\_\_  
 Reason(s) for leaving \_\_\_\_\_

Salary Beginning: \_\_\_\_\_ Per Year  
 Final Salary: \_\_\_\_\_ Per Year

Briefly describe the nature and duties of your position: \_\_\_\_\_

8

## Military Service

Have you ever served in the U.S. Armed Forces ☐ Yes ☐ No Present Selective Service Classification: \_\_\_\_\_

Branch of Service: \_\_\_\_\_ Active Duty: From \_\_\_\_\_ to \_\_\_\_\_

Rank upon separation/discharge: \_\_\_\_\_ Are you presently a member of the active reserves? ☐ Yes ☐ No

9

## References

List three persons who are not related to you by blood or marriage who have not already been listed in item no. 7 who can comment on your education and/or work experience.

Full Name	Complete Home Address	Occupation	Phone
			Office: _____ Home: _____
			Office: _____ Home: _____
			Office: _____ Home: _____

10. Dismissals and/or Forced Resignations. Have you ever been dismissed from any position? \_\_\_\_\_ Have you ever been forced to resign from any position? \_\_\_\_\_ (If answer is "Yes" to either or both of these questions, give complete details under item no. 17.)

11. **Criminal, Traffic and/or Civil Court Record:** Have you ever been convicted of an offense in an adult court? \_\_\_\_\_ (If answer is "Yes", please explain in item no. 17.) A conviction will not automatically exclude you from employment consideration.

12. Your application may be reviewed for any position for which you may be qualified. Please indicate the minimum salary you would accept: \$ \_\_\_\_\_ per year.

13. Have you ever been an applicant or employee of the Washington Metropolitan Area Transit Authority or of the former area bus companies? ☐ Yes ☐ No

☐ Application date: \_\_\_\_\_ Position: \_\_\_\_\_ Disposition: \_\_\_\_\_

☐ Employee dates of employment: \_\_\_\_\_ Position: \_\_\_\_\_

14. Do you have any relatives working for the Washington Metropolitan Area Transit Authority? \_\_\_\_\_ (If answer is "Yes", please give name(s), relationship(s), and position title(s) in item no. 17.)

15. Please indicate source from which you learned of this position: \_\_\_\_\_

16. Has your privilege to operate a motor vehicle ever been denied, suspended or revoked? \_\_\_\_\_ (If answer is "Yes", give complete details under item No. 17. Any applicant who is applying for a position whose major responsibility involves operating a motor vehicle (bus operator, messenger, etc.) must list all unexpired licenses and permits

State	License Number	Type (Class, Chauffeur, etc.)	Expiration Date

Item No.	
----------	--

**WRITE IN LEFT COLUMN NUMBER TO WHICH ANSWERS APPLY.**

(If more space is required, please attach an additional sheet utilizing the same format.)

Each applicant appointed to a position with the Washington Metropolitan Area Transit Authority must meet the requirements of the position including the successful completion of any oral, written, and/or medical examination, confidential investigation or submission of any documents that may be deemed necessary by the Authority. It is understood that where an applicant is being considered for a position that requires a periodic medical examination, such individual will agree to undergo such periodic examinations and that failure to successfully be certified for continued performance may result in an individual's service being terminated. A newly appointed employee will be required to complete a probationary period during which time such employee may be separated for cause without appeal. This probationary period is considered the last stage of the selection process.

I, the undersigned, certify that I have read, personally completed, and fully comprehend this form in its entirety and that the information herein provided is true and complete to the best of my knowledge. I understand that should any statement I have made prove false, misleading or erroneous, it may result in the rejection of my application or discharge from the Washington Metropolitan Area Transit Authority. In submitting this application, I further understand that it becomes the property of the Washington Metropolitan Area Transit Authority and will not be returned.

Date Signed \_\_\_\_\_

252

**Washington Metropolitan Area Transit Authority  
Affirmative Action Compliance Data**

**POSITION(S) APPLYING FOR:**

Please complete the following to assist us in the collection of statistics required by our Affirmative Action Plan and in complying with the U.S. Equal Employment Opportunity Commission reporting requirements (responses to these questions are voluntary)

**1. EEO Race Category:**

- |   |  |
|---|--|
| <input type="checkbox"/> White, not of Hispanic Origin: A person having origins in any of the original peoples of Europe, North Africa, or the Middle East.     | <input type="checkbox"/> Asian or Pacific Islander: A person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands. This area includes, for example, China, Japan, Korea, the Philippine Islands, or Samoa. |
| <input type="checkbox"/> Black, not of Hispanic Origin: A person having origins in any of the black racial groups in Africa.                                    | <input type="checkbox"/> American Indian or Alaskan Native: A person having origins in any of the original peoples of North America, and who maintain cultural identification through tribal affiliation or community recognition.   |
| <input type="checkbox"/> Hispanic: A person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race. |  |

**2. Sex:**    ☐ Male    ☐ Female

- 3. The Transit Authority complies with Section 504 of the Rehabilitation Act of 1973 which prohibits discrimination against qualified handicapped persons. As part of our compliance effort we are giving all applicants and employees the opportunity to respond to this "Voluntary Self-Identification"**

The information you provide will be used as part of the Authority's voluntary efforts to improve employment opportunities for qualified handicapped persons and help to ensure nondiscrimination in our employment policies and practices.

Responding to this invitation is VOLUNTARY. Even if you have a handicap that is apparent to others, you are under no obligation to participate in this self-identification, and failure to do so will not result in any adverse action against you.

Your response will be kept confidential and will NOT become a part of your regular personnel file. However, if your handicap requires a reasonable accommodation, or might necessitate emergency medical treatment, we will provide *relevant* information about your handicap to your supervisor and/or our safety personnel. In addition, government officials who are investigating the Authority's compliance with Section 504 will have access to this information.

Do you have any handicap or health problem which should be taken into consideration in determining job placement or which could possibly affect your job performance?

☐ Yes    ☐ No    If yes, please describe the handicap or health problem: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Attachment 2  
Selection Interview and Rating Form



METRO TRANSIT POLICE  
APPLICANT INTERVIEW BOARD

NAME: \_\_\_\_\_ POSITION: \_\_\_\_\_

Put a check mark opposite each of the traits indicated below to show rating of the individual. Consider his potential value to the Metro Transit Police.

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> creates good first impression                     | <input type="checkbox"/> unimpressive                                       | <input type="checkbox"/> very negative first impression                           |
| <input type="checkbox"/> very well-mannered                                | <input type="checkbox"/> adequate   | <input type="checkbox"/> poorly mannered  |
| <input type="checkbox"/> expressive and attractive mannerisms and gestures | <input type="checkbox"/> average  | <input type="checkbox"/> objectionable mannerism and gestures                     |
| <input type="checkbox"/> pleasant, non-irritating voice                    | <input type="checkbox"/> few mannerisms                                     | <input type="checkbox"/> rasping, irritation voice                                |
| <input type="checkbox"/> excellent use of English                          | <input type="checkbox"/> pleasant voice, but not outstanding                | <input type="checkbox"/> poor choice of words and expressions                     |
| <input type="checkbox"/> good diction, well-modulate voice                 | <input type="checkbox"/> satisfactory use of English                        | <input type="checkbox"/> mumbles, stutters or talks too fast                      |
| <input type="checkbox"/> easily comprehends questions asked him            | <input type="checkbox"/> adequately good diction and modulation             | <input type="checkbox"/> has difficulty in comprehending questions                |
| <input type="checkbox"/> answers clearly and concisely                     | <input type="checkbox"/> long questions have to be explained                | <input type="checkbox"/> very evasive or hesitant about answering                 |
| <input type="checkbox"/> well-poised and self-confident                    | <input type="checkbox"/> answers clearly, but with too much detail          | <input type="checkbox"/> overly reserved and ill at ease                          |
| <input type="checkbox"/> enthusiastic about the work of Police             | <input type="checkbox"/> somewhat timid and self-conscious                  | <input type="checkbox"/> unduly interested in salary and personal benefits of job |
| <input type="checkbox"/> modest and sincere                                | <input type="checkbox"/> indifferent attitude                               | <input type="checkbox"/> opinionated and boast                                    |
| <input type="checkbox"/> emotionally stable                                | <input type="checkbox"/> somewhat aggressive                                | <input type="checkbox"/> emotionally unstable                                     |
| <input type="checkbox"/> seems adaptable, with good background             | <input type="checkbox"/> somewhat immature                                  | <input type="checkbox"/> unsatisfactory general record and background             |
| <input type="checkbox"/> wide scope of interests                           | <input type="checkbox"/> questionable ability                               | <input type="checkbox"/> narrow personal interest                                 |
|  | <input type="checkbox"/> adequate interest in things around him             | <input type="checkbox"/> has a tendency to be intolerant of others                |
|  | <input type="checkbox"/> fails to take any personal blame for past troubles |   |

- ☐ Not Recommended
- ☐ Recommended Hesitantly
- ☐ Recommended
- ☐ Recommended Enthusiastically

Reason for rejection: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Date

Member of Interview Board

### APPLICANT INTERVIEW QUESTIONS

1. What is your reason for selecting a law enforcement career?
2. What is your marital status (divorced, separated, support for children, debts and future plans for marriage)?
3. If you are married, what is your wife's feeling or attitude concerning your employment in law enforcement?
4. What is your ultimate goal or objective as it pertains to a law enforcement career?
5. What education are you currently pursuing? Is it law enforcement related?
6. What are your interests and hobbies?
7. Have you ever applied for a police position with other law enforcement agencies? If so, what agencies? What is the status of your application?
8. Do you have any medical or other problems which would preclude you from meeting police grooming standards to include shaving or do you have any allergies?
9. Do you have any religious scruples against the use of weapons to take a life in the line of duty?
10. Have you ever or do you currently take any drugs; use narcotics; drink alcohol? If so, how much?
11. Have you ever had any conflicts with the law to include minor

traffic violations?

12. If you were in the military, did you ever receive any disciplinary action to include punishment under Article 15 of the Uniform Code of Military Justice?
13. How do you spend your free time (weekends, vacations, holidays)?
14. What qualities do you possess which would make you an applicant that should be selected over other applicants?
15. Have you been previously employed? What was the reason for leaving past employment?
16. What will you do if you are not accepted for employment with the Metro Transit Police?
17. What subject most interested you in high school or college?  
(Check on how well he/she did in English.)
18. What do you feel will be the major disadvantage of a police career?
19. What do you think is the biggest factor involved in influencing people?
20. If you were in my place, interviewing an applicant, what would you ask, or be primarily concerned about?
21. What do you think will be the general public's response to female police officers?
22. Could you tell us what you think the future may hold for you as a

Page 3

Metro Transit Police Officer?

23. How do you feel about the subject of "outside" employment, sometimes referred to as secondary employment or "moonlighting?"
24. Do you fear violence?
25. Do you have a fear of weapons?
26. Could you take a human life in the performance of police duty?

# APPLICANT APPRAISAL RECORD

NAME \_\_\_\_\_ DATE \_\_\_\_\_

Type of position or area of interest \_\_\_\_\_

On this Application Appraisal Record, you will find several categories of evaluation concerning the applicant being rated by an interviewer. You are asked to rate from superior to below average. To aid you in making these determinations, please read the GUIDANCE FOR COMPLETING THIS FORM and apply it to the best of your ability in completing the form.

	Superior	Above Average	Average	Below Average	See General Comments
--	----------	------------------	---------	------------------	----------------------------

## RATING FACTORS: (Check One)

Personality	_____	_____	_____	_____	_____
Education	_____	_____	_____	_____	_____
Work Experience	_____	_____	_____	_____	_____
Job Interest	_____	_____	_____	_____	_____

## RECOMMENDATIONS

☐ Would like to consider for \_\_\_\_\_ (Position)

- ☐ Interested but no appropriate vacancies at present
- ☐ Make reference check to complete files
- ☐ Qualifications do not fit present or foreseeable needs. (Explain under GENERAL COMMENTS)
- ☐ Other \_\_\_\_\_

## GENERAL COMMENTS

Interviewer \_\_\_\_\_ DATE \_\_\_\_\_

Attachment 3  
Essay Questions

Do you perceive the position of a Metro Transit Police Officer as being different from municipal, county or state police officers? State your reason(s) pro or con.

Write several paragraphs stating your sincerity in desiring a position as a Metro Transit Police Officer and your plans for making a career of this position.



Write several paragraphs giving your opinion of the present public attitude toward police officers. You may use both sides of the paper. Be sure to sign your name at the end of your comments.

What is your opinion of how the general public views the police profession?  
Why?

Do you feel the ability to communicate with people effectively is one of the most important skills that a police officer possesses? If so, why?

Why are police-citizen relations especially important in the transit environment?

Attachment 4  
Policy Statement Regarding  
Drug Testing



## Washington Metropolitan Area Transit Authority

### MEMORANDUM

SUBJECT: Addendum to Drug Testing for Illicit  
Narcotic or Controlled Substance Use - TPAS  
Memorandum dated April 1, 1983 (MTP 83-33)

DATE: May 10, 1983

FROM: TPAS - Chief Angus B. MacLean

IN REPLY  
REFER TO:

TO: TPAS Personnel  
(Addendum to MTP 83-33)

Above referenced memorandum dated April 1, 1983, established within TPAS a program concerned with urine testing for illicit narcotic or controlled substance use by personnel assigned to said Office. This addendum is published to insure clarity of intended disciplinary action to be taken when preliminary testing of positive findings are confirmed by laboratory analysis.

Those individuals determined to be users of marijuana will be terminated upon receipt of laboratory confirmation of preliminary findings.

Where individuals are found to have indications of use of other types of drugs and related controlled substances, and there is no verified proper prescription authorizing such use by a treating physician, a termination action will be instituted upon laboratory confirmation of preliminary findings.

Personnel who refuse to participate in the testing program when requested or ordered to, for any reason except when authorized by a treating physician(s), will also be terminated.

Bureau Commanders will assure that all TPAS personnel receive a copy of TPAS Memorandum dated April 1, 1983, and this addendum. Personnel will acknowledge receipt of same by signing and dating appropriate signature lists.

Attachment (MTP Memorandum 83-33)

cc: COUN - J. Robertie  
HMRS - R. Silas  
HMRS - M. Staed  
Local #246 - Mr. E. Jumalon



## Washington Metropolitan Area Transit Authority

### MEMORANDUM

SUBJECT: Drug Testing for Illicit Narcotic  
or Controlled Substance Use

DATE: April 1, 1983

FROM: TPAS - Chief Angus B. MacLean

IN REPLY  
REFER TO:

TO: TPAS Personnel  
(83-33)

Commencing with the date of this memorandum, the Office of Transit Police and Security will implement a program concerned with urine testing for illicit narcotic or controlled substance use by personnel assigned to said Office. This monitoring procedure will consist of urinalysis for personnel who periodically respond to the Bladensburg Clinic for physical examinations which may be required/ordered by competent authority. This includes examinations such as probationary, annual, bi-annual, etc.

The Bladensburg Clinic will provide or otherwise accommodate such urine testing as may be requested by MTP supervisors in instances of suspected use of narcotics/controlled substances. There may be other occasions when personnel are required to submit to urinalysis at the discretion of the Authority's Medical Director or his/her designee.

Personnel required, directed or ordered to report to the Bladensburg Clinic for physical examination or urine testing will on arrival be obliged to display such issued identification credentials or Authority identification cards as are peculiar to their job positions. The rationale for this requirement is to ensure verification concerning the identity of individuals appearing for such examination and/or testing.

Confirmed/positive findings of use of illicit narcotic/controlled substances or the refusal to submit to referenced urine testing may result in the implementation of disciplinary measures up to and including termination.

Supervisors in charge of Bureaus will ensure that the contents of this memorandum are read to, and understood by all personnel assigned to their supervision.

Questions concerning the above will be referred to the appropriate Bureau Commander.

Attachment 5  
Promotion Interview



APPLICANT NAME \_\_\_\_\_

BOARD SUMMARY EVALUATION

- ☐ OUTSTANDING
- ☐ VERY GOOD
- ☐ GOOD
- ☐ FAIR
- ☐ UNACCEPTABLE

CHAIRMAN  
NAME \_\_\_\_\_

- ☐ OUTSTANDING
- ☐ VERY GOOD
- ☐ GOOD
- ☐ FAIR
- ☐ UNACCEPTABLE

BOARD MEMBER  
NAME \_\_\_\_\_

- ☐ OUTSTANDING
- ☐ VERY GOOD
- ☐ GOOD
- ☐ FAIR
- ☐ UNACCEPTABLE

BOARD MEMBER  
NAME \_\_\_\_\_

- ☐ OUTSTANDING
- ☐ VERY GOOD
- ☐ GOOD
- ☐ FAIR
- ☐ UNACCEPTABLE

BOARD MEMBER  
NAME \_\_\_\_\_

- ☐ OUTSTANDING
- ☐ VERY GOOD
- ☐ GOOD
- ☐ FAIR
- ☐ UNACCEPTABLE

Attachment 6  
Performance Appraisal Form

**WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY  
DEPARTMENT OF SECURITY**

**PERFORMANCE RATING**

Name of Member	Bureau/Unit
Present Rank	Rating Period From: _____ To: _____

**NOTE:** Compare this member **ONLY** with all members of the same grade.

- 1. BEARING AND BEHAVIOR:** The extent to which the member meets standards of bearing, dress, courtesy and emotional control and enhances the image of the Department.

UNSATIS- FACTORY	MARGINAL	BELOW AVERAGE	EFFECTIVE AND COMPETENT	EXCELLENT	EXCEPTIONAL	OUTSTANDING
<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>

- 2. HUMAN RELATIONS:** The degree to which the member promotes harmonious relationships with other members of the Department and with civilian associates. Tact, in knowing the right thing to say or do without offending. Attitude of the member.

UNSATIS- FACTORY	MARGINAL	BELOW AVERAGE	EFFECTIVE AND COMPETENT	EXCELLENT	EXCEPTIONAL	OUTSTANDING
<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>

- 3. LEARNING ABILITY:** The degree to which the member grasps instructions, abstract ideas or concepts. Quickness and ease in learning new skills or methods.

UNSATIS- FACTORY	MARGINAL	BELOW AVERAGE	EFFECTIVE AND COMPETENT	EXCELLENT	EXCEPTIONAL	OUTSTANDING
<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>

- 4. KNOWLEDGE AND SKILL:** How adequate is the member's knowledge and skill for the requirements of said member's present position. Resourcefulness in dealing with problems through original adoptions of experience.

UNSATIS- FACTORY	MARGINAL	BELOW AVERAGE	EFFECTIVE AND COMPETENT	EXCELLENT	EXCEPTIONAL	OUT- STANDING
<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>

- 5. ACCEPTANCE OF RESPONSIBILITY:** The degree to which the member accepts responsibility for his/her own actions and the organizational objectives assigned to him/her. Initiative or energy displayed in the initiation of action. Loyalty to the Department.

UNSATIS- FACTORY	MARGINAL	BELOW AVERAGE	EFFECTIVE AND COMPETENT	EXCELLENT	EXCEPTIONAL	OUTSTANDING
<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>

- 6. WRITTEN AND ORAL EXPRESSION:** The ability of the member to communicate his/her ideas in (a) writing - (b) speech.

a.

UNSATIS- FACTORY	MARGINAL	BELOW AVERAGE	EFFECTIVE AND COMPETENT	EXCELLENT	EXCEPTIONAL	OUTSTANDING
<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>

b.

UNSATIS- FACTORY	MARGINAL	BELOW AVERAGE	EFFECTIVE AND COMPETENT	EXCELLENT	EXCEPTIONAL	OUTSTANDING
<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>

- 7. PERFORMANCE OF DUTY:** The degree of acceptability of the work of the member. Dependability to complete written or oral assignments promptly. Judgement or ability to think clearly and arrive at logical and sound conclusions.

UNSATIS- FACTORY	MARGINAL	BELOW AVERAGE	EFFECTIVE AND COMPETENT	EXCELLENT	EXCEPTIONAL	OUTSTANDING
<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>

**8. EVALUATION ABILITY:** A judgement as to how conscientious this member would be toward fulfilling the duties as a reporting and/or endorsing official.

UNSATIS- FACTORY <input type="checkbox"/> <input type="checkbox"/>	MARGINAL <input type="checkbox"/> <input type="checkbox"/>	BELOW AVERAGE <input type="checkbox"/> <input type="checkbox"/>	EFFECTIVE AND COMPETENT <input type="checkbox"/> <input type="checkbox"/>	EXCELLENT <input type="checkbox"/> <input type="checkbox"/>	EXCEPTIONAL <input type="checkbox"/> <input type="checkbox"/>	OUTSTANDING <input type="checkbox"/> <input type="checkbox"/>
---	--	--	---	---	---	---

**9. LEADERSHIP: (Evaluation)** The ability of this member to influence and guide the actions of others.

UNSATIS- FACTORY <input type="checkbox"/> <input type="checkbox"/>	MARGINAL <input type="checkbox"/> <input type="checkbox"/>	BELOW AVERAGE <input type="checkbox"/> <input type="checkbox"/>	EFFECTIVE AND COMPETENT <input type="checkbox"/> <input type="checkbox"/>	EXCELLENT <input type="checkbox"/> <input type="checkbox"/>	EXCEPTIONAL <input type="checkbox"/> <input type="checkbox"/>	OUTSTANDING <input type="checkbox"/> <input type="checkbox"/>
---	--	--	---	---	---	---

**SICK LEAVE USED DURING THE PERIOD COVERED BY THIS REPORT**

Total days	Days due to injuries	Days not due to injuries	No. of times reported sick
------------	----------------------	--------------------------	----------------------------

Remarks.

Present Duty assignment	Date assigned
-------------------------	---------------

Give your evaluation of this member (Rater)

Give your evaluation of this member (Reviewer)

**OVER-ALL EVALUATION (Compare this member ONLY with all members of the same grade.)**

SPECIFIC JUSTIFICATION REQUIRED FOR THESE SECTIONS				SPECIFIC JUSTIFICATION REQUIRED FOR THESE SECTIONS	
UNSATIS- FACTORY <input type="checkbox"/> <input type="checkbox"/>	MARGINAL <input type="checkbox"/> <input type="checkbox"/>	BELOW AVERAGE <input type="checkbox"/> <input type="checkbox"/>	EFFECTIVE AND COMPETENT <input type="checkbox"/> <input type="checkbox"/>	EXCELLENT <input type="checkbox"/> <input type="checkbox"/>	OUTSTANDING <input type="checkbox"/> <input type="checkbox"/>

Signature of member	Date	Signature of Reviewing Official	Date
Signature of Rater	Date	Signature of Approving Official	

Attachment 7

Demographic Statistics of  
Metro Police Force

METRO TRANSIT POLICE

June 1, 1984

	Authorized Strength	Male White - Black	Female White - Black	Male Hispanic	Total Command
Chief	1	1			1
Assistant Chief	<u>1</u>	<u>1</u>	<u>1</u>		<u>1</u>
Subtotal	2	1	1		2
<u>Bureau of Field Operations</u>					
<u>Patrol Division</u>					
Inspector	1	1			1
Captains	4	3			3
Lieutenants	7	5	2		7
Sergeants	15	9	5	2	16
Detectives	10	6	2	1	10
Officers	<u>169</u>	<u>91</u>	<u>37</u>	<u>6</u>	<u>144</u>
Subtotal	206	115	46	7	181
<u>Bureau of Support Operations</u>					
<u>Administration</u>					
Inspector	1	1			1
<u>Revenue Protection</u>					
Captain	1	1			1
Lieutenant	1	1			1
Sergeants	5	3	1		5
Officers	36	17	9	1	30
<u>Training Division</u>					
Captain	1	1			1
Officers		1		1	2
Officer Trainees	<u>1</u>	<u>12</u>	<u>5</u>	<u>1</u>	<u>18</u>
Subtotal	45	37	15	3	59
<u>Internal Affairs</u>					
Captain	<u>1</u>	<u>1</u>			<u>1</u>
Subtotal	1	1			1
OVERALL TOTAL	254	154	62	10	243

MTP - Total      White - 164 = 68%  
                      Black - 76 = 31%  
                      Hispanic - 3 = 1%  
                      Females - 24 = 10%  
                      Males - 219 = 90%

# SPECIAL POLICE AND OTHERS

	Authorized Strength	Male White - Black		Female White - Black		Male-Female Hispanic		Total Command
<u>OCCB</u>								
Lieutenant	1	1						1
Sergeants	5		4	1				5
Officers	<u>12</u>	<u>4</u>	<u>3</u>	<u>—</u>	<u>2</u>	<u>1</u>		<u>10</u>
Subtotal	18	5	7	1	2	1		16
<u>Bladensburg</u>								
Inspector	1	1						1
Captain	1	1						1
Lieutenant	1		1					1
Sergeants	7		6		2			8
Officers	<u>39</u>	<u>2</u>	<u>12</u>		<u>13</u>	<u>2</u>	<u>1</u>	<u>30</u>
Subtotal	49	4	19		15	2	1	41
Police Radio Dispatchers	10	6	2	2				10
Handicapped	2		1	1				2
Claims Investigator	1	1						1
Statistical Assistant	1	1						1
Data Technician	1				1			1
Armored Car	5	2	3					5
Secretaries	4			2	2			4
Clerk-Typist	<u>1</u>	<u>—</u>	<u>—</u>	<u>1</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>1</u>
Subtotal	25	10	6	6	3			25
OVERALL TOTAL	92	19	32	7	20	3	1	82

## Special Police & Others

White - 26 = 32%  
 Black - 52 = 63%  
 Hispanic - 4 = 5%

Females - 28 = 34%  
 Males - 54 = 66%

# RECAPITULATION

	<u>Authorized Strength</u>	<u>Male White - Black</u>		<u>Female White - Black</u>		<u>Male/Female Hispanic</u>	<u>Total Command</u>
Metro Transit Police Subtotal	255	154	62	10	14	3	243
Special Police Officer Subtotal	67	9	26	1	17	3 1	57
Administration/Special TA Subtotal	25	10	6	6	3		25
TPAS TOTAL	347	173	94	17	34	6 1	325

## TOTAL PERCENTAGE BREAKOUT

White - 190 = 59%  
 Black - 128 = 39%  
 Hispanic - 7 = 2%  
 Females - 52 = 16%  
 Males - 273 = 84%



ANNEX 5

U.S. MARINE COPRS SECURITY GUARD BATTALION

Interviewees: Lt. Mark Burger (Asst. OPS Officer/OIC MSG School)  
GYSGT Lon Martin  
Marine Security Guard Battalion (Dept. of State)  
Quantico VA 22134

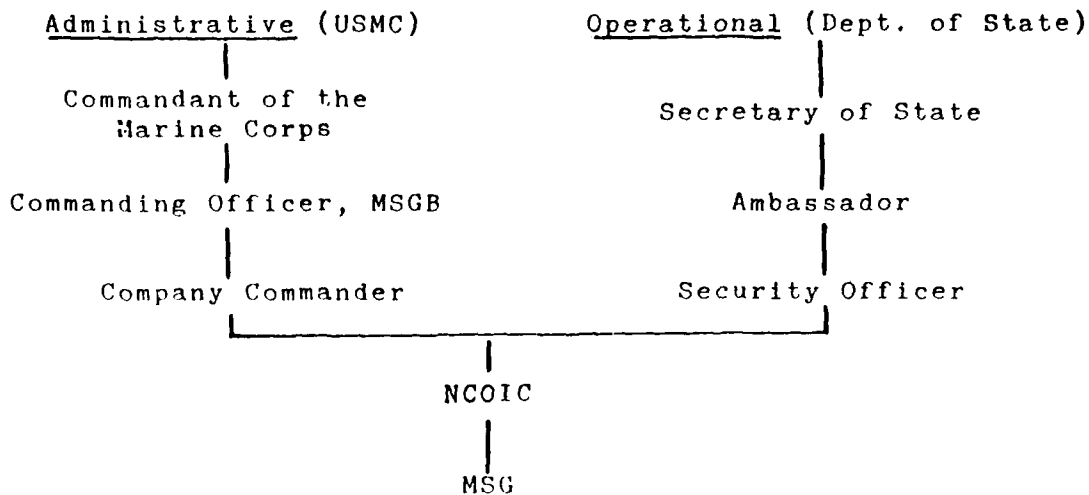
Interviewer: Hough

Date: 7 June 1984

The Marine Security Guard (MSG) provides security guard services to the Embassies, Legations, and Consulates. These services include protection of personnel, property, and classified and administratively controlled material and equipment within these premises. The Marines are prepared to protect the foreign security post and its personnel in emergency situations.

The Marines work in conjunction with the State Department. Both the State Department and the Marines provide training and once on MSG assignment, the State Department is in operational control and the Marine Corps is in administrative control of the MSG.

The hierarchy is:



Eligibility

"Only mature and qualified Marines" in the grades of lance corporal or higher are eligible. ("Mature and qualified privates first class may be granted a waiver by Commandant of the Marine Corps and will be promoted to lance corporal upon successful completion of MSG school.")

Following are the requirements for sergeants and below:

- (1) unmarried, must agree to remain unmarried until completion of tour of duty;
- (2) be a volunteer;
- (3) be a U.S. citizen;
- (4) have completed ENTNAC or NAC
- (5) If a corporal or below, have average conduct and proficiency markings of 4.2 and 4.2, respectively (These are higher than the reenlistment requirements, i.e., to reenlist, need average of 4.0 and 4.0, respectively. The average in MSG is 4.6 and 4.5, respectively);
- (6) must meet Marine Corps standards of personal appearance and must have successfully completed the most recent PFT;
- (7) any one of the following may be considered disqualifying:
  - (a) conviction by general court-martial
  - (b) conviction by special or summary court-martial during the five years immediately prior to MSG assignment
  - (c) more than one non-judicial punishment during the previous year
  - (d) a record of civilian conviction for which some type of restraint was imposed
  - (e) a history of financial instability
  - (f) any derogatory information in an applicant's background which may jeopardize a top secret clearance.
- (8) a minimum derived AA/GT score of 90;
- (9) Have at least 32 months obligated service remaining upon reporting to MSG school (They can reenlist or sign an extension).

Following are the requirements for SNCO's:

- (1) Qualifications 2 through 7 above;
- (2) SNCO's requesting an accompanied tour may not have more than four dependents, including spouse;

AD-A166 251

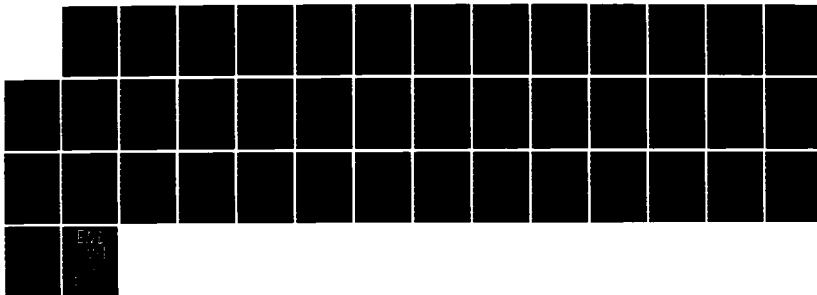
BEHAVIORAL RELIABILITY A REVIEW OF ACADEMIC LITERATURE  
AND ORGANIZATIONAL (U) PERSONNEL DECISIONS RESEARCH  
INST MINNEAPOLIS MN B N BARGE ET AL. 31 DEC 84 96  
DNA-TR-85-21 DNA001-83-C-0050

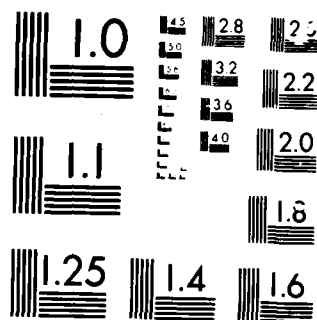
4/4

UNCLASSIFIED

F/G 5/10

NL





MICROCOPY RESOLUTION TEST CHART

A complete physical/mental examination is required. The physical includes urinalysis, hematologic studies, and chest x-ray. They look for any evidence of an acute, chronic, or unusual condition which could make the person unsuitable for duty in an isolated or remote area. All Marines reporting to MSG school must be in dental classification 1. All dental work must be done prior to assignment to the school because once training is completed, they are immediately transferred to the Embassy, Legation, or Consulate.

The next step is a background investigation. All MSGs are required to have a top secret clearance.

### Training

There are five classes per year. Each class has about 100 students per class. Training for NCOs (called SNCO, student company commander while in school) is eight weeks (one week indoctrination, six weeks formal training, and one week administrative training). Once on assignment, these people are the NCOIC, the officer in charge at the embassy, legation, or consulate. Training for Sergeants and below is six weeks formal training.

Training for MSG is presumed to start prior to MSG school. That is, many of the characteristics and attitudes needed by an MSG are instilled in basic training. They are: obedience to orders; team work; attention to detail; excellent physical condition, integrity/loyalty; action orientation, impeccable military appearance, and the desire to be a Marine. The people who make it through MSG school have these characteristics in spades.

The six weeks formal training at MSG school is taught by both the Marine Corps and the State Department. The training consists of the following:

#### Marine Corps Instruction (Represents about 60% of training)

- . Physical Fitness
- . Uniform and civilian clothing (includes classes in textiles, textures, how to mix and match clothing. They are given \$650 to buy civilian clothing. They are inspected in civilian clothing and if it isn't acceptable, they have to go out and buy more with their own money. The emphasis is on conservative styles.)
- . Security procedures
- . Honors and Ceremonies (What is appropriate behavior)
- . Administrative matters

- . Social graces (They go to formal gatherings at the embassy, legation, or consulate. Therefore, they are taught how to eat properly, how to set a formal dining table so that they know what each thing is for, how to address people, etc., etc.)
- . Small arms training

State Department Training (Represents about 30% of training)

- . Foreign Service establishment
- . Language and culture
- . Use of deadly force
- . Methods of espionage, terrorist activities
- . Evasive driving (for own safety)

Specialized Instruction (Represents about 10% of training)

- . EOD bombs and incendiary devices
- . Hostage training
- . Rescumatic emergency escape devices
- . Safehaven emergency medical kit
- . Counter-intelligence

They must qualify with a 38-caliber pistol (their basic side arm). They have to qualify at the FBI range at close range; they must score 190 points to qualify. They use a 200 - 500 range and emphasize accuracy.

The MSG is responsible for the interior of the embassy, legation, or consulate. They learn how to protect that area. They receive training in foam, gas, soap, handcuffs, night sticks, and the equipment/weapons found in the area to which they will be assigned.

The performance evaluation criteria are found in Attachment 3. Regarding physical fitness, they must score 100 on the physical fitness test. To achieve this minimum score they must (1) run three miles in less than 18 minutes; (2) do 80 sit-ups in less than two minutes; (3) do 20 pull-ups.

At MSG school, each student is assigned a faculty advisor. There are about 25 students per faculty advisor. A faculty advisor has served as an MSG with distinction. He serves as a role model for the trainees in addition to providing counseling, etc.

An ITR (individualized training record) is kept for each MSG trainee. One part of the ITR is a log in which daily entries are made describing things the individual did. It is very detailed and complete.

A screening board meets twice during the six week training, the third and the fifth week. For the first board meeting, every one is evaluated thoroughly. The second board meeting is for those they are not quite sure of. The evaluation of candidates is very comprehensive. One reason is that if an MSG does anything at the embassy, legation, or consulate to draw negative attention to himself, it is an international incident. MSGs carry a black passport and are a part of the diplomatic corps. (Attachment 4 is a copy of the overall screening board evaluation.)

In addition to instructor and faculty advisor log entries and evaluations (see Attachment 5 for a copy of the instructor/faculty advisor performance evaluation form), there are peer evaluations. (See Attachment 6 for a copy of the peer evaluation form.) Each trainee is assigned to a student company unit of approximately 10. Peer evaluations are made within this group. They are done twice during training, both times just before the board meets.

There is a lot of "face-time" in MSG school and they believe that during such intensive contact for six weeks they are able to identify those people who do not have the characteristics they want MSGs to have. (I saw an ITR and it is startlingly detailed and complete; they are probably right. The documentation is most impressive.)

Of the sergeants and below, about 30-35% do not complete MSG training. The two primary reasons are maturity and attitude. Of the E6s and above, 40-45% do not complete MSG training. The three primary reasons are maturity, attitude, and leadership. The intensive and stringent screening gives MSGs a special and elite feeling, which the officers feel is motivating.

Once training is complete MSGs are immediately sent abroad. The first post is a "hardship" post (for social, economic, or political reasons) for 15 months.

#### Monitoring On-The-Job

At these posts there are inspections every six months, which are done by a company commander. Perhaps 30 MSGs are relieved of duty each year (there are 1250 MSGs around the world). The reasons are marriage, dating the ambassador's daughter, sleeping on post, etc. Only rarely is it for drug use. This is more of a problem in some countries than in other countries, e.g., Bogota, Columbia. Urine analyses are done on a random basis to check for drug use. When it is done, the entire detachment is tested.

### Other Information

- . MSG is not an "occupation" or MOS: one can't spend one's career in MSG and related activities.
- . In some countries, e.g., Cuba, Marines are not allowed. As a result, the MSGs wear civilian clothes, even when on guard duty.
- . The MSG is considered to be the elite of the elite. In recognition of this, 100 points are added to a Marine's composite scores upon completion of MSG training. These added points are authorized for one year after an MSG tour.
- . MSGs are considered among the top 5% of the Marine Corps.
- . MSGs seem to need to be high achievers in a structured environment. They also probably like/need order in their lives. They need to like a regimented life.
- . The NCOIC is sometimes the only commander of American troops in a country. Consequently, his reports are like command reports. The NCOIC position is an unusual position in that once on assignment, one has a very high degree of authority. The NCOIC is the highest level officer at the embassy, legation, or consulate giving orders to the MSGs. In no other situation does a gunnery sergeant have as much authority. This is the reason leadership is a very important selection/training criterion for the NCOIC position. They need to be leaders and diplomatic.
- . Once on assignment, MSGs live in Marine Houses, which they manage. Honesty, getting along with others, and teamwork are essential in such situations.



Attachment 1

Selection Interview Guide

APPLICANT INTERVIEW GUIDE

1. This guide is provided to assist the interviewing officer in determining the suitability of the applicant for assignment with the Department of State's foreign service establishments overseas.

2. The characteristics listed below should be considered by the officer conducting the interview:

a. Maturity.

b. Self-confidence, poise and personality.

c. Manner, appearance, and bearing.

d. Voice, language, expression, alertness, and ability to converse.

e. Professional knowledge.

3. The interviewing officer should bear in mind that the applicant, if successful, will be assigned a tour of duty in a foreign country at an embassy or consulate of the United States. MSG's live and work in full view of many foreign nationals, and ranking officials of our Government. They are under the immediate command of the Marine SNCOIC, performing the duty of protecting classified material, often times vital to the security of our Nation. In many cases MSG's serve in areas where political, economic, and social conditions restrict off-duty time to a small American community. The Marine is a representative not only of the Marine Corps, but of the United States.

4. Information on the MSG program and nature of the duty:

a. The MSG program was authorized in 1948 to assist the Department of State in fulfilling its security requirements at diplomatic missions abroad. There are approximately 1200 Marines assigned to the program and over 115 diplomatic missions located in over 100 foreign countries and cities.

b. Each security guard detachment is commanded by a Marine SNCO, the NCOIC, who is under the direct supervision and operational control of the Department of State's Post Security Officer. Marine company commanders at five locations act as intermediate commanders between the MSG battalion and the individual embassy detachment.

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c. The average detachment consists of nine Marines; the NCOIC and eight sergeants and below. Detachments range in size from 6 to 32 Marines. Approximately one third of the detachments are comprised of six Marines.

d. The MSG is assigned to the embassy to safeguard classified material, enforce security regulations, and protect American lives and property. When the embassy business of the day is completed, the Marine on duty continues the workday. MSG's check unoccupied offices for classified material left adrift, look for open doors and windows, and check general security of the building. Safes and files are inspected to ensure they are properly secured. MSG's often escort a cleaning force of foreign employees and work closely with the embassy duty officer after working hours. MSG's must be capable of maintaining their composure in the case of riots, mob action, or terrorist activity. They must be able to think clearly and follow detailed instructions at all times. MSG's work closely with their fellow Marines and in some cases with members of the U.S. Army, Navy, and Air Force. They have daily contact with American and foreign employees of the embassy.

e. The embassy Marine represents the United States and the Marine Corps. Therefore, the MSG must present a neat military appearance, be adept at self-expression, and perform the duties in a courteous and congenial manner. MSG's must have the ability to tactfully, impartially, and firmly enforce security regulations. They could be placed in situations of possible compromise which require sound judgement, a high degree of moral integrity, honesty, loyalty, and unquestionable devotion to duty.

f. Marines are not sent to embassies for social duties. The majority of their time is spent standing a lonely watch and performing required military duties. However, there will naturally be an involvement, to a certain degree, in social activities with the American community and, in some countries, with foreign personnel. The MSG should be a good mixer.

g. During a tour of duty with the security guard program, the embassy Marine maintains military proficiency through basic military training supervised by the NCOIC and through mandatory MCI enrollment. MSG's are called upon to present lectures to fellow Marines on basic military subjects and current events. The MSG must have a desire for self-improvement and an interest in study. MSG's become more aware of the world around them and may take an active interest in the country to which assigned. A security guard tour can be

ENCLOSURE (2)

one of the most enlightening and beneficial experiences of a Marine's career.

h. MSG's live together in fully furnished quarters provided by the Department of State. In most countries they live in a house, with each Marine normally assigned an individual bedroom, in the civilian community of the city to which assigned. The detachment members, under the direction of the NCOIC, are responsible for the operation of their "home." They are required to assess, collect, and manage the funds provided for the operation of the mess. Each Marine will take a turn supervising the Marine mess and purchasing food. This may include assisting the cook in the preparation of the menu and ensuring the cleanliness of the galley. MSG's become bookkeepers and auditors by managing the mess and household expense funds for their fellow Marines. An individual who is unable to manage personal finances cannot be expected to satisfactorily perform the financial duties that will be required of the security guard.

i. Physical fitness programs are in effect at all security guard detachments. Many detachments are involved in competition with each other to determine physical fitness excellence. Most embassies have recreational programs calling on the attached U.S. agencies to provide teams. In almost every case, the embassy looks to the Marines to organize and lead the athletic program. Softball, volleyball, basketball, tennis, and golf are the most common sports. However, some detachments, because of political or space limitations, are restricted to small area events such as horseshoes, badminton, cribbage, chess, pinochle, and pool tournaments. Marine detachments have always taken pride in their athletic pursuits. The embassy Marines must be industrious, have an interest in competition, and set an example of "fair play" and sportsman-like conduct.

j. Sergeants and below assigned to the program are required to sign an agreement stating that they are volunteers and that they will not marry prior to the completion of their overseas assignment. The embassy Marine must possess and maintain high moral standards. The "Don Juan" type is a liability to the program. Involvement with the opposite sex, excessive use of alcohol, use of drugs, and failure to obey lawful orders are the four most common reasons for early relief from the program.

k. MSG's are authorized to take annual leave in CONUS and most foreign countries. Approval from CMC is required for leave in certain foreign countries. Emergency leave will be granted upon verification by the American Red Cross. While

ENCLOSURE (2)

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Marines on emergency leave are authorized travel by scheduled government aircraft, in most of the foreign countries where MSG's are assigned, commercial air is the only available transportation, in which case the Marine must bear the expense of travel. Extended distances are often involved in taking leave; therefore, a Marine who has family problems should seriously consider this fact prior to application for the program.

1. Transportation of motorcycles and private automobiles overseas at government expense is not authorized for MSG personnel in the grade of sergeant and below. Students are further discouraged from bringing private automobiles and motorcycles to the MSG School due to immediate assignment overseas upon graduation. Sergeants and below assigned to the program must arrange for the sale of their automobiles and motorcycles or provide for storage or other means of safeguarding.

m. Marines are encouraged to have at least \$300 in their possession upon reporting to MSG School to meet the incidental expenses involved in preparing for a demanding and challenging assignment as an MSG in a foreign country.

5. Information applicable to SNCO's:

a. Assignment as NCOIC of an MSG detachment is considered a command billet with all the authority and responsibility of a commander except those restricted by law to commissioned officers; e.g., NJP authority.

b. The NCOIC of an MSG detachment has the unique responsibility of satisfying two bosses. One is the Marine's operational supervisor, the post security officer, who is a foreign service officer. The second is the Marine's administrative commander, a Marine Corps officer who inspects the detachments semiannually to ensure they are maintaining Marine Corps standards and meeting their administrative requirements.

c. Department of State provides furnished quarters for the NCOIC and family. In most cases these quarters are equivalent to or surpass government quarters on a military base. However, the availability of other base-type activities; i.e., commissary, PX, dispensary, may be limited or nonexistent, depending on the country to which assigned.

d. Some type of commissary and medical support is available at almost every foreign service establishment. A co-op commissary, or ordering service is one arrangement whereby

ENCLOSURE (2)

MCO 1306.2L  
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the embassy community procures U.S.-type foods. Medical support usually consists of an embassy nurse and/or a local contract doctor as a minimum. In serious cases, patients are medically evacuated to the nearest U.S. military hospital when local facilities are not adequate.

e. Schooling for dependent children is normally provided through a U.S. supported or international school. The availability of schools for dependent children is considered in making assignments.

f. Assignment as the NCOIC of an MSG detachment is demanding but can be personally satisfying and professionally rewarding. For a Marine and family it provides the challenge, adventure, and experience of living in a foreign country. In some cases MSG's are the only U.S. military personnel in the country.

6. The description of the duties performed and the personal traits necessary for MSG personnel, as outlined herein, should provide the commanding officer with sufficient information to make an evaluation of the Marine's qualifications. The possible compromise of national security and discredit upon the Marine Corps and the American image abroad are two of the most serious repercussions which may result from poor screening and assignment procedures. Screening of applicants cannot be based on past or present duty performance alone. It must go deeper into the Marine's background; personal traits, habits, interests, potential and personality. Many Marines can be considered outstanding in the FMF or another type assignment, but still not be the "right person" for the MSG program. Elimination at the command level of personnel who are not suited for this independent-type duty in a foreign country will result in a considerable savings to the Marine Corps and will definitely be in the best interest of the individual concerned.

7. Upon departure from the present command, the applicant must be ready to attend the school without disruptions. The Marine must arrive with all administrative requirements completed and be dentally, medically, and mentally prepared. The applicant must be prepared to spend 30 months overseas. Personal and financial problems must be considered and managed accordingly. Upon reporting to school, all requirements will be checked to ensure qualification. Those individuals not qualified will not be accepted by the school.

COMMANDING OFFICER'S GUIDE

This form is intended for use by career planners, administrative personnel, screening boards, and commanders during the selection process for MSG duty.

-----

1. Marine has been counseled regarding the MSG program and understands the provisions of MCO 1306.2L relative to assignment. \_\_\_\_\_

2. Marine is a volunteer. \_\_\_\_\_

3. Service record book contains evidence of a satisfactory National Agency check (NAC). \_\_\_\_\_

4. Weight is proportionate to height. \_\_\_\_\_

5. Passed most recent PFT. \_\_\_\_\_

Date administered \_\_\_\_\_ Score \_\_\_\_\_

6. On the basis of an interview and review of service and health records, this Marine appears to meet the criteria for granting a top secret clearance. \_\_\_\_\_

(At the initial interview, the Marine should be briefed on the data required for the submission of a request for a background investigation so that information not available locally may be collected.)

7. Marine briefed that a detailed background investigation will be conducted by the Defense Intelligence Service. \_\_\_\_\_

8. Request for background investigation was submitted by

\_\_\_\_\_  
NAME GRADE BILLET  
\_\_\_\_\_  
APPROVED on DATE

(This should be accomplished after receipt of orders but prior to detachment.)

a. Yellow copy of DD Form 1879 (request for BI) and copy of DD 398 attached to left side of SRB. \_\_\_\_\_

9. Marine's average pros/cons are at least 4.2/4.2 respectively, and Marine does not possess any of the disqualifying criteria listed in paragraph 4a(8) of MCO 1306.2L. \_\_\_\_\_

ENCLOSURE (3)

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10. Marine's AA/GT score is 90 or above. \_\_\_\_\_

11. Marine is medically and dentally (Class 1) qualified. \_\_\_\_\_

a. Physical conducted on: \_\_\_\_\_

DATE

b. Dental exam conducted on: \_\_\_\_\_

DATE

12. Sergeants and below have at least 32 months of obligated active service as of the MSG class commencing date specified in Marine's orders to the school. \_\_\_\_\_

13. Marine is a U.S. citizen. \_\_\_\_\_

14. Marine has been advised to procure proof of U.S. citizenship in accordance with paragraph 7a(b) of MCO 1306.2L. \_\_\_\_\_

(Marine must have this document when reporting to MSG School.)

15. Marine is not a staff sergeant selectee. \_\_\_\_\_

16. Applicable to SNCO's:

a. If married and elects an accompanied tour, SNCO has no more than four dependents including spouse. \_\_\_\_\_

b. Spouse and dependents to accompany SNCO overseas are U.S. citizens (natural or naturalized). \_\_\_\_\_

c. Proof of citizenship obtained for spouse and dependents. \_\_\_\_\_

d. Spouse and dependents have been physically and dentally examined and are qualified to accompany the member overseas. \_\_\_\_\_

e. SNCO informed that dependents and household effects cannot be moved at government expense until ultimate duty station orders are received at MSGRn. \_\_\_\_\_

f. Have at least 26 months obligated service as of the MSG class commencing date specified in Marine's orders to the school. For those Marines selected for assignment to a non-hardship post (36-month) be willing to extend/reenlist to have sufficient obligated service to complete a full tour prior to their transfer from MSG school. \_\_\_\_\_

ENCLOSURE (3)



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(SNCO's are given leave to arrange their personal affairs upon graduation. However, travel back to their previous duty station is at their own expense. Therefore, it is recommended that the spouse be thoroughly briefed regarding securing travel and shipping household effects.)

17. The final phase of processing a Marine for assignment to MSG duty is to ensure all administrative actions have been completed, after receipt of orders.

a. Waived overseas control date on page 11 of the SRB, if applicable. \_\_\_\_\_

b. The following agreement/statement on the receiving endorsement of the Marine's orders have been made. \_\_\_\_\_

(1) Sergeants and below - Volunteer, will remain unmarried, and has read MCO 1306.2L. \_\_\_\_\_

(2) SNCO's - Volunteer and has read MCO 1306.2L. \_\_\_\_\_

c. Personal financial record, health record, dental record, service record book, training records and a completed copy of this checklist shall be entrusted to Marine's care for delivery to Headquarters, MSGBn.

18. One copy of the completed Commanding Officer's Guide should be placed on the left side of the Marine's service record book.

Attachment 2

Screening Team's  
Contact/Evaluation Sheet

Marine Security Guard Battalion  
Information/Screening Team  
Contact Sheet

DATE \_\_\_\_\_

1. NAME, RANK, SSN, MOS \_\_\_\_\_
2. COMPLETE MILITARY ADDRESS \_\_\_\_\_  
\_\_\_\_\_
3. AGE/DATE OF BIRTH \_\_\_\_\_
4. PLACE OF BIRTH (CITY, STATE) \_\_\_\_\_
5. HEIGHT/WEIGHT \_\_\_\_\_ 6. LAST PFT/DATE \_\_\_\_\_
7. AVG PRO/CON (CPL BELOW ONLY) \_\_\_\_\_
8. DATE CURRENT TOUR BEGAN/TIME ON STATION \_\_\_\_\_
9. EAS \_\_\_\_\_ 10. DATE OF RANK \_\_\_\_\_
11. PRIMARY DUTY \_\_\_\_\_
12. BASIC ELIGIBILITY CRITERIA:

	<u>YES</u>	<u>NO</u>
VOLUNTEER?	_____	_____
U. S. CITIZEN?	_____	_____
SINGLE? (SGT/BELOW)	_____	_____
WILL EXTEND/REENL IF REQUIRED?	_____	_____
ONE YEAR ON STATION?	_____	_____
COMPLETED ENTNAC/NAC?	_____	_____

DESCRIBE BELOW IN REMARKS SECTION ANY OF THE FOLLOWING ITEMS:

NJP?	_____	_____
COURTS-MARTIAL?	_____	_____
POLICE RECORD?	_____	_____
PERSONAL/FAMILY PROBLEMS?	_____	_____
FINANCIAL PROBLEMS?	_____	_____
ANY DEPENDENTS?	_____	_____

DO YOU HAVE ANY RECURRING MEDICAL OR DENTAL PROBLEMS? \_\_\_\_\_

ARE YOU SERVING AN ENLISTMENT FOR WHICH A BONUS IS AUTHORIZED? \_\_\_\_\_

IS THERE ANYTHING IN YOUR BACKGROUND THAT WILL INTERFERE WITH YOUR GETTING  
A TOP SECRET CLEARANCE? \_\_\_\_\_

13. REMARKS: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SNCO'S ONLY

1. MARITAL STATUS, NUMBER AND AGES OF CHILDREN. \_\_\_\_\_

2. ARE YOUR DEPENDENTS U. S. CITIZENS? \_\_\_\_\_

3. ANY RECURRING MEDICAL OR DENTAL PROBLEMS WITH YOUR DEPENDENTS? \_\_\_\_\_

4. ANY PROBLEMS WITH OVERSEAS ASSIGNMENTS? \_\_\_\_\_

5. ANY FINANCIAL OR PERSONAL PROBLEMS? \_\_\_\_\_

ALL MARINES

PRIVACY ACT STATEMENT

Under the authority of Section 301, Title 5, U.S. Code, information contained in this form is requested in order to interview and screen you for suitability for the Marine Security Guard School Program. The information provided will not be divulged without your written authorization to anyone other than individuals involved in the screening process to determine your eligibility for the MSG program. You are not required to provide this information, however, failure to do so could result in your being ineligible for duty with the Marine Security Guard Program.

\_\_\_\_\_  
SIGNATURE OF MARINE

Attachment 3  
Performance Evaluation Criteria

BnBul 1500  
23 Apr 1984

PERFORMANCE EVALUATION CRITERIA

5 Jun 1984

TEST PHASE #1 (M-900X1)

M-103 DOS INDOCTRINATION  
M-102 OIC INDOCTRINATION  
M-206 DUTIES OF POST #1 AND #2  
S-203 FOREIGN SERVICE SECURITY REGULATIONS  
S-215 RADIO PROCEDURES  
M-204 VIOLATION ISSUE PROCEDURES  
S-212 FOREIGN METHODS OF ESPIONAGE  
M-205 SECURITY INSPECTION PROCEDURES  
M-503 MAINTENANCE AND WEARING OF THE UNIFORM  
M-305 FINANCIAL MANAGEMENT  
M-505 PHYSICAL FITNESS AND WEIGHT CONTROL  
M-104 HISTORY OF THE MSG PROGRAM  
M-502 MILITARY CUSTOMS AND COURTESIES  
M-501 CIVILIAN CLOTHING AND STANDARD OF DRESS

12 Jun 1984

TEST PHASE #2 (M-900X2)

M-505 LEADERSHIP TRAITS AND PRINCIPLES  
S-106 THE FOREIGN SERVICE ESTABLISHMENTS  
M-107 PASSPORT APPLICATIONS  
M-303 HEALTH SANITATION AND HYGIENE  
M-105 COMMAND AND CONTROL  
S-201 SECURITY PROGRAM IN THE FOREIGN SERVICE  
S-214 DESTRUCTION OF CLASSIFIED MATERIAL  
M-504 MAINTENANCE AND WEARING OF THE DRESS BLUE UNIFORM  
S-603 NIGHTSTICK TRAINING  
S-606 HANDCUFF PROCEDURES  
M-218 RESCUEMATIC

18 Jun 1984

TEST PHASE #3 (M-900X3)

S-213 TERRORIST ACTIVITIES  
M-301 MARINE HOUSE AND FUND MANAGEMENT  
M-304 SOCIAL USAGES AND CUSTOMS  
S-202 PHYSICAL SECURITY  
M-507 FITNESS REPORTS  
M-306 TRAINING ON POST  
S-209 PASSPORT FRAUD RECOGNITION  
M-307 CELEBRATION AND CEREMONIES  
M-508 ILLEGAL DRUG USE AND ALCOHOL ABUSE

25 Jun 1984

TEST PHASE #4 (M-900X4)

S-601 .38 CALIBER SMITH & WESSON REVOLVER  
M-602 ORIENTATION TO THE CLOSE COMBAT FISTOL COURSE  
M-604 DEPARTMENT OF STATE WEAPONS AND ORDNANCE  
S-603 NIGHTSTICK AND HANDCUFF TRAINING  
M-402 CONDUCT IN A FOREIGN COUNTRY  
S-211 EMERGENCY SITUATIONS

ENCLOSURE (2)

Attachment 4  
Screening Board Evaluation Form

# FIRST SCREENING BOARD EVALUATION

CLASS NO: \_\_\_\_\_

DATE: \_\_\_\_\_

LAST NAME	FIRST NAME	M.I.	RANK	SSN	MOS
-----------	------------	------	------	-----	-----

## 1. PERSONAL QUALITIES

	<u>ACC</u>	<u>MAR</u>	<u>UNAC</u>		<u>ACC</u>	<u>MAR</u>	<u>UNAC</u>
PERSONAL APPEARANCE	_____	_____	_____	INTEGRITY/RELIABILITY	_____	_____	_____
PHYSICAL FITNESS	_____	_____	_____	MILITARY BEARING	_____	_____	_____
COOPERATION	_____	_____	_____	SELF-CONFIDENCE	_____	_____	_____
JUDGMENT	_____	_____	_____	ATTITUDE	_____	_____	_____
MOTIVATION	_____	_____	_____	MATURITY	_____	_____	_____

IF NOT ACCEPTABLE, AN EXPLANATION MUST BE GIVEN:

## 2. PERSONAL HISTORY

	<u>YES</u>	<u>NO</u>		<u>YES</u>	<u>NO</u>
CIVIL OFFENSES	_____	_____	MEDICAL PROBLEMS	_____	_____
MILITARY OFFENSES	_____	_____	FINANCIAL PROBLEMS	_____	_____
DEP OR ALCOHOL PROBLEM	_____	_____	FAMILY PROBLEMS	_____	_____

ANY DEROGATORY COMMENTS MUST BE EXPLAINED BELOW:



DATE: \_\_\_\_\_

3. RECOMMENDATION OF DETACHMENT COMMANDER

- A. RETENTION \_\_\_\_\_  
B. PROBATION \_\_\_\_\_  
C. TERMINATION \_\_\_\_\_

YOUR ESTIMATE OF THIS MARINE'S VALUE TO MARINE SECURITY GUARD BATTALION:

\_\_\_\_\_  
SIGNATURE RANK

4. RECOMMENDATION OF INSTRUCTOR/ADVISOR

- A. RETENTION \_\_\_\_\_  
B. PROBATION \_\_\_\_\_  
C. TERMINATION \_\_\_\_\_

RECOMMENDED MARKINGS

PROFICIENCY: \_\_\_\_\_

CONDUCT: \_\_\_\_\_

YOUR ESTIMATE OF THIS MARINE'S VALUE TO MARINE SECURITY GUARD BATTALION:

\_\_\_\_\_  
SIGNATURE RANK

5. SCREENING BOARD DECISION

- A. RETENTION \_\_\_\_\_  
B. PROBATION \_\_\_\_\_  
C. TERMINATION \_\_\_\_\_

SCREENING BOARD COMMENTS:

\_\_\_\_\_  
SIGNATURE RANK/BILLET

Attachment 5

Instructor/Faculty Advisor  
Performance Evaluation Form

# PROFESSIONAL PERFORMANCE EVALUATION FORM

LAST NAME FIRST NAME M.I. RANK SSN MOS

DATE: DET NO: INSTRUCTOR/ADVISOR:

	NO	UN	BA	AV	AA	FX	OS
ENDURANCE/PHYSICAL FITNESS							
PERSONAL APPEARANCE							
MILITARY PRESENCE/BEARING							
ATTENTION TO DUTY/DETAIL							
COOPERATION/TEAMWORK							
INITIATIVE/MOTIVATION							
JUDGEMENT/ATTITUDE							
ACCEPTS RESPONSIBILITY							
FORCE/SELF-CONFIDENCE							
LOYALTY							
INTEGRITY/RELIABILITY							
MATURITY							
GENERAL VALUE TO MSG BN							
DISTRIBUTION OF DETACHMENT							
OVERALL GRADE							

Attachment 6  
Peer Evaluation Form

# INSTRUCTIONS TO ALL STUDENTS

1. This form is designed for use by the student in filling out the contemporary Leadership Evaluation Form.
2. Careful deliberation should be taken before assigning marks in the various Leadership qualities. Student leadership accomplishment, or lack of, should be reflected in the quality which most accurately depicts the individual's performance. This does not prevent the students from marking another student on two qualities for a specific performance if the circumstances warrant such action. If a trait is not observed, it should be marked "not observed".
3. Abbreviations shown in marking boxes stand for the following:
  - NO - NOT OBSERVED - Insufficient opportunity to evaluate.
  - U - UNSATISFACTORY - Performance in applicable quality was below satisfactory standards.
  - BA - BELOW AVERAGE - Performance in applicable quality was below the generally accepted standards expected.
  - A - AVERAGE - Performance in applicable quality met the generally accepted standards expected.
  - AA - ABOVE AVERAGE - Performance in the applicable quality was of a higher degree than the generally accepted norm.
  - E - EXCELLENT - Performance in applicable quality was of a demonstrated excellence.
  - O - OUTSTANDING - Performance in applicable quality was of a superior nature, seldom achieved by others.

## ADDITIONAL EVALUATIONS FOR STAFF NCO'S ONLY

	NC	U	BA	A	AA	E	O	REMARKS
FORCE								
GROWTH POTENTIAL								
JUDGEMENT								
TRAINING PERSONNEL								
INITIATIVE								
ALIGNED INTEREST								
LEADERSHIP								

REMARKS:

# CONTEMPORARY LEADERSHIP EVALUATION FORM

DATE \_\_\_\_\_

	NO	U	BA	A	AA	E	O
ENDURANCE/PHYSICAL FITNESS							
PERSONAL APPEARANCE							
INTEGRITY/TRUSTWORTHINESS							
ATTITUDE TOWARDS MSG DUTY							
COOPERATION/TEAMWORK							
DRINKING HABITS/BEHAVIOR							
LIBERTY HABITS/BEHAVIOR							
MOTIVATION/EFFORT							
MATURITY							
LOYALTY							
PERSONAL RELATIONS							
SELF-CONFIDENCE							

	NO	U	BA	A	AA	E	O
GENERAL VALUE TO MSG BN							
WOULD YOU WANT THIS MARINE IN YOUR DETACHMENT	YES	NO					

EVALUATOR:

RANK \_\_\_\_\_

NAME \_\_\_\_\_

DETACHMENT # \_\_\_\_\_

REMARKS:

CONTEMPORARY BEING EVALUATED:

RANK \_\_\_\_\_

NAME \_\_\_\_\_

DETACHMENT STANDING: \_\_\_\_\_ OF \_\_\_\_\_

Attachment 7  
A Form Completed  
by the Applicant/Trainee  
at Some Point

1/A  
INIT

1. What is your religion? \_\_\_\_\_. Will your religion prevent you from being assigned to a particular country? \_\_\_\_\_.

2. Have you had any involvement with illegal drugs since entry into the Marine Corps? \_\_\_\_\_. If you answered yes, give the date and details of involvement. \_\_\_\_\_.

3. Have you ever been personally counseled about excessive use of alcohol? \_\_\_\_\_. If you answered yes, give the date and details. \_\_\_\_\_.

4. Date and place of birth? \_\_\_\_\_.  
In what area of the United States or overseas have you spent most of your life? \_\_\_\_\_.

5. Have you ever seen a psychiatrist or psychologist? \_\_\_\_\_. Give dates and reasons. \_\_\_\_\_.

6. Are you going steady? \_\_\_\_\_. Engaged? \_\_\_\_\_.  
Married? \_\_\_\_\_. Do you have children? \_\_\_\_\_. Dependents? \_\_\_\_\_.

7. Are you married? \_\_\_\_\_. Separated? \_\_\_\_\_. Divorced? \_\_\_\_\_.  
Have you previously had a marriage annulled? \_\_\_\_\_. If yes, give full particulars to include dates, status at present time, and your obligations resulting from any court rulings. \_\_\_\_\_.

8. What is your home of record? \_\_\_\_\_.

9. Have you ever been arrested, questioned, detained, held, fined or tried for any reason by civil authority? \_\_\_\_\_. If yes, give full particulars to include dates, places, charges or violations and the disposition of the case. \_\_\_\_\_.



10. Have you ever been arrested, questioned, detained, held, court-martialed, or received non judicial punishment from military authority? . If yes, give full particulars to include dates, places, charges or violations and the disposition of the case(s). \_\_\_\_\_

11. Are there any other incidents in your life which could be considered as unfavorable toward you when discovered in a background investigation, (such as molested by a homosexual, drunkenness, fighting, etc.)? . If yes, give full particulars to include dates, places, and what the incident(s) involved. \_\_\_\_\_

12. Circle highest grade completed in school. 1 2 3 4 5 6 7 8 9 10 11 12  
College. 1 2 3 4. College major. \_\_\_\_\_

13. Do you have any relatives residing overseas? . If yes, indicate their relationship to you, and the country they are residing in. \_\_\_\_\_

14. Have you traveled overseas other than while on active duty in the armed forces? . If yes, give full particulars to include what countries, when the travel took place, and the reasons for the travel. \_\_\_\_\_

15. Do you know how to drive an automobile? . Do you presently own a car? . Motorcycle? . Truck, van or camper? . If yes, where is it now located? . What will you do with it when you go overseas on this assignment? \_\_\_\_\_

16. What are your hobbies? \_\_\_\_\_

---

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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1. **Содержание:** 1. Введение. 2. Описание объекта исследования. 3. Методология исследования. 4. Результаты исследования. 5. Заключение.

[illegible]

1. 100% 2. 100% 3. 100% 4. 100% 5. 100% 6. 100% 7. 100% 8. 100% 9. 100% 10. 100% 11. 100% 12. 100% 13. 100% 14. 100% 15. 100% 16. 100% 17. 100% 18. 100% 19. 100% 20. 100% 21. 100% 22. 100% 23. 100% 24. 100% 25. 100% 26. 100% 27. 100% 28. 100% 29. 100% 30. 100% 31. 100% 32. 100% 33. 100% 34. 100% 35. 100% 36. 100% 37. 100% 38. 100% 39. 100% 40. 100% 41. 100% 42. 100% 43. 100% 44. 100% 45. 100% 46. 100% 47. 100% 48. 100% 49. 100% 50. 100% 51. 100% 52. 100% 53. 100% 54. 100% 55. 100% 56. 100% 57. 100% 58. 100% 59. 100% 60. 100% 61. 100% 62. 100% 63. 100% 64. 100% 65. 100% 66. 100% 67. 100% 68. 100% 69. 100% 70. 100% 71. 100% 72. 100% 73. 100% 74. 100% 75. 100% 76. 100% 77. 100% 78. 100% 79. 100% 80. 100% 81. 100% 82. 100% 83. 100% 84. 100% 85. 100% 86. 100% 87. 100% 88. 100% 89. 100% 90. 100% 91. 100% 92. 100% 93. 100% 94. 100% 95. 100% 96. 100% 97. 100% 98. 100% 99. 100% 100. 100%

SCHOOL	CLASS STANDING/GRADE
--------	----------------------

[illegible]

Journal of the American Statistical Association, 1998, Vol. 93, No. 443, pp. 1031-1041. DOI: 10.1080/01621459.1998.10477500

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27. What were you preparing yourself to be prior to joining the Marine Corps? \_\_\_\_\_

28. Indicate where you have previously served in the Marine Corps.

PLACE	UNIT	DATE

29. If you served in another branch of the United States Armed Forces, indicate where you had previously served. \_\_\_\_\_

30. Have you ever applied for any program(s) leading to a commissioned officer rank? \_\_\_\_\_. If yes, indicate what program(s), and the results of the application(s). \_\_\_\_\_

31. What is your favorite reading material? \_\_\_\_\_

32. List three traits that you would desire in your closest friend. \_\_\_\_\_

33. Whom do you consult for financial assistance and why? \_\_\_\_\_

34. What must a person do to become a good conversationalist? \_\_\_\_\_

35. If you were invited to the home of a foreign family, what topics of conversation do you feel you would discuss? \_\_\_\_\_

ANNEX 6  
OLYMPICS SECURITY HEADQUARTERS

Interviewee: Dr. Susan Saxe  
Psychologist  
Los Angeles

Interviewer: Leaetta M. Hough

Date: 18 July 1984, 9:30 a.m.

Dr. Saxe does consulting with many organizations, primarily in the area of screening people for security positions. We first met Dr. Saxe at the training academy of the LAPD. She has done consulting with them. We talked with Dr. Saxe at the Olympics security headquarters. She has done some screening of applicants for security positions. The great majority of Olympic security positions, however, is filled using private security companies who do their own selecting. Dr. Saxe did her doctoral thesis in the area of police work and has been in the area ever since.

Dr. Saxe says she looks for the following characteristics:

- . integrity,
- . compassion,
- . emotional stability and coping with stress,
- . interpersonal skills,
- . maturity, and
- . judgment and decision-making.

The information and techniques she uses to gather information about the individual in each of these areas are:

- . autobiography (which includes a statement of what the person thinks are his or her most salient characteristics),
- . sentence completion,
- . MMPI,
- . background investigation, and
- . clinical interview.

She examines the autobiography, sentence completion, MMPI, and background investigation information and then interviews the applicant. She looks for inconsistencies in any area or in the information and during the interview probes that area. She also looks for tiny flaws that are hinted at or revealed in the tests and background investigation and probes or "pushes," as she called it, in those areas. The autobiography and sentence completion are her own creations and have no particular scoring procedure. There is no empirical research available as yet regarding their use. They may very well, however, provide Dr. Saxe with areas to probe in the interview. She says she examines individual responses to MMPI items such as "Have you ever been in trouble with the law?" and "Have you ever stolen anything?" If an applicant says "yes" to either of these, she probes into what it was, what happened, etc., etc. Dr. Saxe said that a person's history of coping with stress is very important for making

predictions about how the person will do in a future stressful situation. However, she also stated that the way management supports its people, in terms of being consistent, compassionate, and sensitive, is as important to coping successfully with stress as is the individual's coping skills and abilities. She referred to the old adage "past behavior is the best predictor of future behavior" and said that the background investigation is the best place to find out about an individual's past, though she also believes that the interview is critical to integrating it all.

ANNEX 7

WISCONSIN ELECTRIC POWER COMPANY

Interviewee: Alfred P. Mascitti, Ph.D.  
Supervisor  
Supervisory & Professional Placement  
Wisconsin Electric Power Company  
Milwaukee, Wisconsin 53201

Interviewers: Leaetta M. Hough  
Meg Keyes

Date: 14 September 1984

Selection

Wisconsin Electric (WE) uses a two-hurdle selection process for any job requiring access to the nuclear plant.\* First, all applicants are screened with a battery of cognitive tests developed during the Post Operator Selection System (POSS). This empirically validated battery of inventories, tests, and questionnaires is now available through the Edison Electric Institute for administration to candidates for operations jobs in electrical power generating plants. These instruments yield scores which are easily interpreted according to varying probabilities of successful work performance. Validities of the battery have been shown to generalize across companies and across candidates regardless of race or sex. WE uses the highest recommended cutoff which is equivalent to a WAIS score of approximately 110. Thus, a very select group of applicants moves on to the second hurdle, psychological assessment.

The NRC's proposed access authorization rule required psychological assessment. Dr. Mascitti, in consultation with Sandy Davis, has recently revamped the psychological screening done by WE. This screening forms the second hurdle in the selection process for any job requiring access to the nuclear plant. It is designed to evaluate applicants on five categories of unreliable job behavior that were developed as part of the POSS project. The five dimensions are:

- 1) Argumentative hostility toward authority,
- 2) Irresponsibility/Impulsivity,
- 3) Defensive and compulsive incompetence,
- 4) Substance abuse, and
- 5) Emotional and personal adaptability (psychopathology).

Detailed definitions of all five dimensions are attached.

---

\*The only exception is the security guard force. WE contracts with the Guardian Protection Agency to provide security guards for its facilities. WE does require Guardian to use acceptable techniques to screen applicants for these jobs. Currently, they use a clinical psychologist, who acts as an outside consultant, to administer an MMPI and conduct a clinical interview with each applicant. Security guards are re-evaluated every two years.

All applicants who pass the first hurdle, the cognitive battery, are given the MMPI. MMPI profiles are evaluated by Dr. Mascitti using very specific decision rules developed by Sandy Davis and Jim Butcher. In addition, these applicants are scheduled for interviews with experienced placement specialists who have attended a one-day training session designed by Sandy Davis. The placement specialists rate the applicants on two of the five dimensions listed above:

- 1) Argumentative hostility toward authority, and
- 2) Irresponsibility/Impulsivity.

These dimensions were selected as the two most amenable to evaluation in an interview setting. (The Special Interview Evaluation Sheet is attached.)

Finally, all applicants who pass the first hurdle are scheduled for a background investigation. WE contracts with Equifax Services, Inc. to do all background investigations. The Equifax background investigation includes the following:

- 1) verification of social security number and date of birth with two previous employers or one previous employer and one educational institution,
- 2) verification of employment history for the last five years,
- 3) verification of educational history,
- 4) investigation of credit history for the last five years,
- 5) investigation of criminal history involving a review of state, county, and municipality records in place of residence and place of employment, if different, for the last five years, and
- 6) review of character references, three of whom are taken from the Nuclear Access Authorization Application and two of whom are developed by Equifax.

Equifax supplies a report within seven working days. Dr. Mascitti referred us to Carol M. Sewell, a national account executive with Equifax, for more information on their services (505-325-9695). He also recommended the Burns Agency and provided the following address:

Jeffrey L. Gwynne  
President  
Burns International Investigations, Inc., Ltd.  
Burns Plaza IV - Suite 200  
12 Route 17 North  
Rumney, NH  
201-874-1390

When the background investigation is completed, Dr. Mascitti reviews all three components of the psychological assessment. If the applicant passes the screen, he writes a short memo to the security guard who grants the new hire unescorted access to the nuclear plant. If the psychological assessment is "questionable," Dr. Mascitti questions

the placement specialists to learn if this particular applicant has skills or experience which make him/her especially valuable. If not, Dr. Mascitti instructs the placement specialist to "put the applicant on hold." If the applicant does have valuable skills or experiences, he/she is referred to the clinical psychologist.

The clinical psychologist is an outside consultant selected and trained by Sandy Davis. In evaluating an applicant, he reviews the MMPI, interview data, and background investigation. He also administers the CPI and conducts a clinical interview where he probes for more sensitive information than is collected elsewhere in the assessment. He then recommends whether the applicant should be allowed access to the nuclear facility.

Internal transfers into the Nuclear Power Department must also undergo the psychological assessment described above. Dr. Mascitti said that WE has received very few complaints about the intrusive nature of the psychological screening. In addition to the extensive psychological assessment, all applicants who pass the first hurdle also receive a complete medical examination and drug screening.

Dr. Mascitti noted that for a typical opening WE will receive 700 applications. A resume review, concentrating on grade point average and number of courses in science and math, will reduce the number of applicants to be tested with the POSS battery to 150. The high cutoffs used for the POSS battery will reduce the number of applicants who go through the expensive psychological screening and medical exam to fifty. Approximately, thirty additional applicants will be dropped because of factors uncovered in the medical or psychological assessments.

#### Monitoring

WE has a commitment to the NRC to re-evaluate those employees with access to the nuclear facility every two years. In 1981, WE required all employees at the nuclear plant to take an MMPI which resulted in severe morale problems. Rather than repeat this fiasco in 1983, Dr. Mascitti, in consultation with Sandy Davis, developed an on-going Behavior Reliability Program.

Using PDI's "Behavior Reliability Program for the Nuclear Industry" (Nureg CR 2076) as a guide, Dr. Mascitti met with many key groups to discuss the development of the program. Included in these discussions were:

- . labor relations,
- . employee assistance,
- . medical,
- . accident prevention,
- . legal,
- . nuclear power department, and
- . plant personnel.

Dr. Mascitti chose to involve these groups in the development of the program so that they would experience a sense of "ownership" and involvement.



The program which developed from these meetings is coordinated by a single person, Dr. Mascitti. The program is initiated with a one-day training package which instructs supervisors to recognize gradual deterioration in job performance and which specifies a series of administrative procedures that are appropriate when such deterioration occurs. The training package emphasizes behavior observation, rather than evaluation, and documentation. It relies heavily on case studies and films. In addition, every supervisor is required to complete a Behavior Reliability Job Performance Checklist for each of his/her employees on a yearly basis. This checklist is performance-based and has provided space for the supervisor to record his/her miscellaneous comments. Dr. Mascitti has found that the supervisors often include detailed comments in these sections.

The checklists are returned to Dr. Mascitti and do not become part of the employee's personnel files. Employees do not have access to these documents, and information contained in the checklists cannot affect status, promotion, or salary. Dr. Mascitti reviews the checklists, consults with the plant manager, and may involve employee assistance or the clinical psychologist when problems surface. In addition, supervisory personnel may contact him if they become aware of a reliability problem. Dr. Mascitti described several case studies in which he had attempted to deal with troubled employees in a highly individualized, non-punitive fashion. In his role as coordinator of the Behavior Reliability Coordinator, he refers employees to other professionals for counseling or therapy; he does not act as a counselor. Although the thrust of the program is non-punitive, Dr. Mascitti notes that the risk imposed by unreliable employees is so great that it is not always possible to allow them continued nuclear plant access. In these cases, limited plant access or transfer to a fossil plant are both possible alternatives.

Thus far, both supervisory and union personnel have generally supported the Behavior Reliability Program. Dr. Mascitti believes it is successful because it is performance-based, non-punitive, and emphasizes early identification. He also noted that plant managers appreciate having one contact (the coordinator) when faced with a behavior reliability problem.

WE has also articulated a tough, new drug and alcohol abuse policy. The policy reads:

- 1) any employee found using, possessing, distributing, or selling alcohol while on duty shall be subject to termination;
- 2) any employee using, possessing, selling, or distributing illegal drugs while on duty shall be terminated;
- 3) any employee undergoing medical treatment with a controlled substance shall report it to his/her supervisor; and
- 4) any employee using, possessing, selling, or distributing illegal drugs while off duty shall be subject to severe disciplinary action including termination if it affects job performance or results in publicity.

If a supervisor has probable cause to suspect any employee is under the influence of alcohol or drugs, he can pull that employee off the job and hold him/her in the guard house. Only the person in charge of the entire plant has the authority to ask the employee to undergo drug and alcohol testing at a nearby medical facility. If the employee refuses to submit to drug and alcohol testing, he/she is charged with insubordination and is subject to severe disciplinary action including possible termination.

WE has also developed a Behavior Reliability Program for security guards. A one-day training program for guard supervisors has been developed which is very similar to the plant supervisor training program. Like plant supervisors, guard supervisors are asked to complete Behavior Reliability Checklists. These checklists are returned to Dr. Mascitti who discusses any problems that surface with the Guardian Agency. Because there is no employee assistance program for guards, the thrust of their Behavior Reliability Program is much more punitive. In addition, WE has developed a half-day training program for guards which emphasizes behavior observation, rather than evaluation, and documentation. The administrative procedures to follow when suspect behavior is observed are also reviewed.

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## DEPARTMENT OF DEFENSE

Assist to the Secy of Def, Atomic Energy  
3 cys ATTN: Mil Appl, Col A. Johnson

Defense Advanced Rsch Proj Agency  
ATTN: STO, N. Doherty  
ATTN: W. Isler

Defense Industrial Scty Institute  
ATTN: Facilities Protection Dept

Defense Intelligence Agency  
ATTN: RTS-ZB

Defense Logistics Agency  
ATTN: Security Officer

Defense Nuclear Agency  
ATTN: DDOA  
ATTN: OAOP  
ATTN: STNS  
2 cys ATTN: NSNS  
2 cys ATTN: STNA  
4 cys ATTN: STTI-CA  
10 cys ATTN: OPNS

Defense Technical Information Center  
12 cys ATTN: DD

Dep Under Secy of Def Policy  
3 cys ATTN: LTC Moore, CSP

Interservice Nuclear Weapons School  
2 cys ATTN: TTV 3416th TTSQ

Joint Chiefs of Staff  
3 cys ATTN: J-5 Plans & Policy/Nuclear Div

Joint Strat Tgt Planning Staff  
ATTN: JPPFD  
ATTN: JPTP

US European Command  
ATTN: ECJ-4/7-LW

Under Secy of Def for Rsch & Engrg  
ATTN: MASP(TWP)

## DEPARTMENT OF THE ARMY

Army Research Institute  
10 cys ATTN: Commander

BMD Program Office  
ATTN: DACS-BMI

BMD Systems Command  
2 cys ATTN: BMDSC-LD

Dep Ch of Staff for Rsch Dev & Acq  
ATTN: DAMA-ARZ-D

Headquarters, Department of the Army  
2 cys ATTN: DAMA-CSC-ST  
2 cys ATTN: DAMA-CSC-4  
2 cys ATTN: DAPE-HRE

## DEPARTMENT OF THE ARMY (Continued)

Dep Ch of Staff for Personnel  
5 cys ATTN: DAPE-HRE

Director of Supply & Maintenance  
ATTN: DALO-SMS

Office of the Chief of Engineer  
ATTN: DAEN-RDM  
2 cys ATTN: DAEN-MCD-D, Mr. Reynolds

Seneca Army Depot  
ATTN: SDSSE-PQ  
2 cys ATTN: Provost Marshal  
2 cys ATTN: Surety

Sierra Army Depot  
4 cys ATTN: Security Operations

Southern European Task Force  
ATTN: AESE-GCT-S

US Army Air Defense School  
ATTN: ATSA-BMD-L

US Army Belvoir R&D Ctr  
ATTN: AMC-PM-PSE  
ATTN: STRBE-ES  
ATTN: STRBE-N  
ATTN: STRBE-X  
ATTN: STRBE-XI  
ATTN: STRBE-XS  
ATTN: STRBE-ZK  
ATTN: STRBE-ZPS

US Army Criminal Investigation Cmd  
ATTN: Director of Operations

US Army Electronic Warfare Lab  
ATTN: DELEW-I-S, Security Systems

US Army Engineer Div Huntsville  
ATTN: HNOED-SR, L. Ziegler

US Army Engrg & Topographic Lab  
ATTN: B. Zimmerman

US Army Europe and Seventh Army  
2 cys ATTN: AEAGC-NC, DCSOPS, Nuc-Chem Div  
2 cys ATTN: AEAGD-MM-SW  
2 cys ATTN: AEAPM-PS

US Army Human Engineering Lab  
ATTN: DRXHE-CC  
ATTN: DRXHE-CS

US Army Intelligence Agency  
ATTN: DELEW-I

US Army Mat Cmd Proj Mngr for Nuc Munitions  
2 cys ATTN: DRCPM-NVC

US Army Material Command  
2 cys ATTN: DRCHC, Nuc-Chem Ofc  
2 cys ATTN: DRCSS

DEPARTMENT OF THE ARMY (Continued)

US Army Military Police School  
ATTN: ATZN-MP-CMC  
5 cys ATTN: Assist Commandant  
5 cys ATTN: ATZN-MP-CC  
5 cys ATTN: ATZN-MP-CD  
5 cys ATTN: ATZN-MP-CDC-ST  
5 cys ATTN: ATZN-MP-COM  
5 cys ATTN: ATZN-MP-Library  
5 cys ATTN: ATZN-MP-TD  
5 cys ATTN: ATZN-MP-TRC  
5 cys ATTN: Commandant  
5 cys ATTN: DALET  
5 cys ATTN: DBLET  
5 cys ATTN: Phys Scty Committee  
5 cys ATTN: Training Dev

US Army Nuclear & Chemical Agency  
ATTN: MONA-OPS, B. Thomas  
2 cys ATTN: MONA-SU

US Army Soldier Support Ctr  
ATTN: ATSG-DDR

US Army Tank Automotive RSD Command  
ATTN: AMSTA-RCAF

US Army Training and Doctrine Comd  
5 cys ATTN: ATCD  
5 cys ATTN: ATCD-NN  
5 cys ATTN: ATTNG-RT-AI

USA Night Vision & Electro-Optics Lab  
ATTN: DELNV-SI, Mr. Doepe

USAINSCOM Pentagon Counterintelligence Force  
ATTN: Special Agent T. Forman

USAS4A  
ATTN: AMXSY-CA

1st Special Operations Comd (Abn)  
5 cys ATTN: AFVS-GC-D, MAJ Ogden

59th Ordnance Brigade  
2 cys ATTN: AEUSA-Z  
5 cys ATTN: Surety

DEPARTMENT OF THE NAVY

Chief of Naval Operations  
ATTN: OP-009N

David Taylor Naval Ship R&D Ctr  
ATTN: Code 1203

Marine Corps  
ATTN: Code PPO

Naval Ocean Systems Center  
ATTN: Code R312  
ATTN: Code R312

Naval Sea Systems Command  
ATTN: SEA-041327  
ATTN: SEA-40G

Naval Surface Weapons Center  
ATTN: Code R-402

DEPARTMENT OF THE NAVY (Continued)

Ofc of the Dep Ch of Naval Ops  
ATTN: NOP 009N

Space & Naval Warfare Systems Cmd  
ATTN: PME-121-3

Strategic Systems Programs (PM-1)  
ATTN: SP-113

US Atlantic Fleet  
ATTN: Code 342  
ATTN: NRT-4

US Pacific Fleet  
ATTN: Code 626  
ATTN: Code 92

Naval Coastal Systems Laboratory  
ATTN: Code 2230

DEPARTMENT OF THE AIR FORCE

Air Force Logistics Command  
ATTN: AFLC

Air Force Office of Security Police  
ATTN: AFOSP/SPPC  
ATTN: AFOSP/SPOS

Air Force Systems Command  
ATTN: AFSC/SP

Air Force Weapons Lab  
4 cys ATTN: NTSMS

Ballistic Missile Office/DAA  
ATTN: MGEN

Department of the Air Force  
ATTN: AF/RDST

Electronics Systems Div/OCBR  
ATTN: Physical Sec Sys Dir

Military Airlift Command  
ATTN: MAC/SP

Nuclear Surety  
ATTN: XXXXX

Pacific Air Forces  
ATTN: SP

SACSP  
ATTN: SP

Strategic Air Command  
ATTN: SPP  
ATTN: SPO  
ATTN: XPQ

Tactical Air Command  
ATTN: SP

US Air Force/IG  
ATTN: IGS

US Air Forces in Europe  
2 cys ATTN: USAFE/SP

DEPARTMENT OF ENERGY

Sandia National Laboratories  
ATTN: Org 5211, J. Kane  
5 cys ATTN: Div 1736  
5 cys ATTN: Org 5260, J. Jacobs

OTHER GOVERNMENT AGENCIES

Central Intelligence Agency  
ATTN: R&D Subcommittee  
ATTN: Security Committee, W. Johnson

Institutional Research & Development Unit  
ATTN: SSA, R. Yates

Los Angeles Police Department  
ATTN: Captain T. Hays  
ATTN: Captain W. Davis  
ATTN: Commander G. Levant  
ATTN: Dr. S. Saxe-Clifford

Los Angeles Sheriff's Department  
ATTN: G. Burns, Psychological Services  
ATTN: Lieutenant J. Wickler  
ATTN: Lieutenant L. Davenport  
ATTN: Lieutenant M. McAndrews

Marine Security Guard Battalion  
ATTN: GYSgt L. Martin  
ATTN: Lt Mark Burger, Assist Ops Officer

Metro Transit Police  
ATTN: Chief A. McLean, CPP  
ATTN: Inspector B. Murrow

National Bureau of Standards  
ATTN: Law Enforcement Stds Lab, L. Elaison

New Zealand Embassy  
2 cys ATTN: W. Norman, CPP, Security Officer

Police Officer & Firefighter Selection Unit  
ATTN: M. Noble

US Army Recruiting Command  
2 cys ATTN: J. Thompson, USARCPAE-RE  
2 cys ATTN: MAJ D. Ryan, Ch Media & Distr Div

OTHER GOVERNMENT AGENCIES (Continued)

US Dept of State, Office of Security  
ATTN: Ch, Div of Tech Svcs A/SY/OPS/T  
ATTN: Ch, Res & Dev Br A/SY/OPS/T

Wisconsin Electric Power Company  
ATTN: Dr. A. Mascitti

DEPARTMENT OF DEFENSE CONTRACTORS

BDM Corp  
ATTN: Corporate Library

Booz-Allen & Hamilton, Inc  
ATTN: Tech Library

General Research Corp  
ATTN: Tech Info Office

JAYCOR  
ATTN: Library

Personnel Decisions Research Institute  
ATTN: B. Barge  
ATTN: L. Hough  
ATTN: E. Kemery  
ATTN: M. Dunnette  
ATTN: R. Kanfer  
ATTN: J. Kamp  
ATTN: M. Cardozo

R&D Associates  
ATTN: Library

RCA Corp  
ATTN: Library

Science Applications Intl Corp  
ATTN: Tech Library

Teledyne Brown Engineering  
ATTN: D. Guice

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